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I.1

TECHNICAL MEMORANDUM
FOR THE
PHASE II FIELD INVESTIGATION

at

THE SELMER COMPANY
500 INDUSTRIAL PARKWAY
ELKHART, INDIANA

Prepared for

NORTH AMERICAN PHILIPS CORPORATION
THE SELMER COMPANY
AND
MACMILLAN, INC.

Prepared by

WW ENGINEERING & SCIENCE
5555 GLENWOOD HILLS PARKWAY
GRAND RAPIDS, MICHIGAN 49588-0874

MAY 1994

PROJECT 22334



WW *Engineering & Science*
A Summit Company



May 31, 1994

Mr. Ken Theison
On-Scene Coordinator
U.S. EPA, Region V
77 W. Jackson Boulevard HSE-5J
Chicago, IL 60604

RE: SELMER SITE, ELKHART, INDIANA (CIVIL ACTION NO. S89-00348)
PHASE II FIELD INVESTIGATION TECHNICAL MEMORANDUM

Dear Ken:

Enclosed is a copy of the technical memorandum for the Phase II field investigation at the Selmer site in Elkhart, Indiana. This submission satisfies the scheduled submission date as specified in the project schedule included in the approved work plan.

By copy of this letter, copies of the technical memorandum are submitted to those indicated, as specified in Section XXII of the consent decree.

If you have any questions, please contact me at (616) 942-9600.

Sincerely,

WW ENGINEERING & SCIENCE
Environmental Services

Scott T. Dennis, C.P.G.
Senior Hydrogeologist

cc: Frank Bentkover-Chief, Environmental Enforcement Section, U.S. Dept. of Justice
Chief, Emergency Response Branch, HSE-5J, U.S. EPA Region V
Thomas Burzycki, The Selmer Company, L.P. (c/o James V. Woodsmall)
Risa H. Weinstock, North American Philips Corporation
Linda M. Bullen-McDermott, Will & Emery

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MAY 1994

PROJECT 22334

Prepared by:

Lauryl A. Lefebvre
Lauryl A. Lefebvre
Project Hydrogeologist

Reviewed by:

Scott Dennis
Scott T. Dennis, C.P.G.
Senior Hydrogeologist

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1.0 INTRODUCTION

WW Engineering & Science (WWES) has been jointly retained by North American Philips Corporation, The Selmer Company, L.P., and Macmillan, Inc. to prepare and implement an investigation work plan for The Selmer Company site, hereafter referred to as the "Site," as defined in the Consent Decree in U.S. v. The Selmer Company, L.P., et. al. (Civil Action No. S89-00348). The Site includes the Selmer Company facility, hereinafter referred to as the "facility," and is located at 500 Industrial Parkway in the Eastside Industrial Park in Elkhart, Indiana (see Figure 1). The facility was built in 1965 and has been used exclusively for the manufacture of brass musical instruments.

WWES prepared a work plan entitled *Work Plan for a Field Investigation at the Selmer Company*, dated October 1992 (Work Plan). This Work Plan was approved by U.S. EPA and incorporated into the referenced Consent Decree. The Work Plan described field investigative activities designed to characterize the soil and ground water conditions at the Site in order to determine the presence or absence of an area(s) of contamination that may have resulted from an alleged historical disposal of trichloroethene (TCE) at the Site. TCE was used during the manufacturing process to degrease and clean metal parts.

The Work Plan was divided into two phases of work. The first phase of investigation (Phase I) consisted of performing a soil gas survey to determine the identity, relative magnitude, and distribution of volatile organic compounds (VOC's) in the soil vapor of the unsaturated zone. The second phase of investigation (Phase II) consisted of implementation of a soil and ground water sampling program to characterize the soil stratigraphy, quantify VOC's which may be present in the soil and ground water, and evaluate the distribution of the VOC's.

The results of the first phase of the field investigation have been presented in the January 1994 *Technical Memorandum for the Phase I Field Investigation at the Selmer Company*. During Phase I, tetrachloroethene (PCE), trichloroethene (TCE), and trichloroethane (TCA) were detected at low ion counts levels ($\leq 4,000$ ion counts) in the soil gas at the site.¹ The Phase I Technical Memorandum presented the distribution of VOC's in the soil gas and proposed the locations for soil borings to be installed in the Phase II Investigation to measure the actual concentration of VOC's present in the soil. The Phase I Technical Memorandum was approved by the U.S. EPA in their February 2, 1994 letter to Scott Dennis of WWES.

¹There is no direct correlation between ion counts and actual soil concentrations.

This technical memorandum presents the results of Phase II of the field investigation--drilling and sampling--which was implemented during February and March of 1994.

1.1 DESCRIPTION OF FACILITY AND BACKGROUND

The facility consists of 18.45 acres of lightly wooded land and is located in the W1/2 of the SE 1/4 of Section 3 of T37N, R5E of Concord Township (Figure 1). The manufacturing plant and associated storage buildings are located in the northern half of the property (see Figure 2). An office building with a parking lot is located at the south end of the facility. Asphalt pavement for parking also exists along the western portion of the facility.

The facility, currently operating under the name "Vincent Bach Company," was constructed in 1965 and has been used exclusively for the manufacture of brass musical instruments. The facility was operated from 1965 to 1970 by C.G. Conn, Ltd. The property was transferred in June 1970 to The Selmer Company. On December 29, 1988, The Selmer Company was sold to Integrated Resources Inc.. In late 1993, Integrated Resources sold the business to private investors.

Several additions have been added to the manufacturing plant since its construction in 1965. In 1971 the building was expanded approximately 59,000 square feet north and 12,000 square feet east of the original plant. A storage shed is located east of the northern addition. In 1972 a southern extension of approximately 15,000 square feet was added to the original manufacturing plant.

A narrow strip of asphaltic and/or concrete pavement ranging from 20 to 40 feet wide runs along the east side of the manufacturing building. Concrete pavement also extends 185 feet east of the manufacturing building south of the storage shed. To the east and south of the asphaltic and/or concrete pavement, the ground surface is heavily vegetated and decreases in elevation towards the lowland on the east side of the Site. Figure 2 shows the topography in this area, which was the focus of this investigation.

Surface water runoff drains to topographic depressions located east of the manufacturing building and northwest of the office building. The area east of the manufacturing building was the area of interest in this investigation.

2.0 OBJECTIVES AND SCOPE OF WORK

The field investigation was designed to address the allegation of historical disposal of TCE on the east side of the manufacturing facility. The purpose of the Phase II work was to determine the nature and extent of VOC's, if any, in the soil and ground water which may have resulted from the alleged improper historical disposal of TCE east of the manufacturing plant. The specific objectives of the Phase II investigation were as follows:

- to characterize the soil stratigraphy at the site;
- to quantify VOC's which may be present in the soil and ground water;
- to evaluate the distribution of the VOC's in the soil and ground water, if present;
- to identify the potential source area(s) associated with soil and ground water impact, if possible.

The scope of work for Phase II field investigation included drilling soil borings and installing temporary monitoring wells. Specifically, the scope of work included the following tasks:

- drilling 5 soil borings using hollow-stem auger drilling techniques;
- collecting soil samples using split-spoon samplers equipped with stainless steel liners;
- analyzing soil samples for VOC's;
- installing monitoring wells at each soil boring location;
- surveying soil boring/monitoring well locations, and ground surface and top-of-casing elevations;
- measuring static water levels at each monitoring well location;
- collecting ground water samples at each monitoring well location;
- analyzing ground water samples for VOC's;
- preparing soil boring/well log sheets, site maps, a ground water table contour map and cross-sections/isochemical contour maps, if appropriate.

3.0 METHODOLOGY

The field and laboratory methods associated with the Phase II investigation were implemented in accordance with the October 1992 Work Plan and are summarized in this section.

3.1 SOIL BORINGS AND SOIL SAMPLING

On March 2 and 3, 1994, five soil borings (SB-1 through SB-5) were drilled using 4.25-inch inner diameter (ID) hollow-stem augers and an all-terrain vehicle (ATV) drill rig to assess the soil and ground water conditions at the site. The soil borings were located east of the manufacturing plant; north and west of the lowland area, at locations approved by U.S. EPA as shown in Figure 3. The soil borings were drilled to a depth of 7 feet below the ground water table. The depth of the soil borings ranged from 6 to 21 feet below ground surface.

During drilling, soil samples were collected continuously using a 1.5-inch ID split-spoon sampling device, 1.5 feet in length, in accordance with ASTM Method D-1586. The split-spoon sampling device was equipped with three 6-inch long stainless steel liners. During soil sampling, the split-spoon (with stainless steel liners) was driven into undisturbed soils ahead of the lead auger. Upon removal of the middle stainless steel liner from the split-spoon, the ends were immediately sealed with Teflon caps. These liners were labeled and placed in an iced cooler for transport to the analytical laboratory for possible chemical testing, and the liners remained sealed until the time of sample preparation in the laboratory.

The soils in the remaining liners were removed for lithologic description and field screening of total VOC's. Field screening of soil samples was performed using a photoionization detector (PID) using a 11.7 electron-volt (eV) lamp. The field screening results were recorded on well/boring log sheets along with a lithologic description of the sample and the number of blow counts required to advance the split-spoon sampler (Appendix A).

All field equipment used during sample collection was decontaminated between sample intervals to reduce the likelihood of cross-contamination of the soil samples. The drilling equipment and well materials were steam-cleaned prior to usage at each soil boring location. The soil sampling equipment was decontaminated prior to collection of soil at each sample interval.

Upon completion of the soil borings, monitoring well materials and associated backfill materials were placed in the boreholes and the soil cuttings generated during drilling were transferred to 55-gallon drums and transported to an on-site retention area.

3.2 MONITORING WELLS AND GROUND WATER SAMPLING

Temporary monitoring wells (TW-1 through TW-5) were installed during drilling at each soil boring location to assess the ground water quality at the site (Figure 3). The well screens were positioned to intersect the water table.

With the exception of TW-1, each monitoring well was constructed of 2-inch ID polyvinyl chloride (PVC) riser pipes and a 2-inch ID, 10-foot long, PVC well screen. Once the augers were advanced to an approximate depth of 7 feet below the water table, the riser pipe and well screen were placed in the borehole. Monitoring well TW-1 was constructed using a 5-foot long screen, the bottom of the well screen set on top of a clay layer which was encountered 5 feet below ground surface.

Following placement of the well materials in the borehole, the augers were retracted to expose the well screen to the natural formation and the native soils were allowed to collapse around the well screen. The remaining annular space of the borehole was backfilled with a sand pack to 2 feet above the top of the well screen and hydrated bentonite pellets to grade. For monitoring well TW-1, the sand pack extended to 7 inches below ground surface and hydrated bentonite was used as a surface seal. The top of the riser pipe for each well extended approximately 2 feet above ground surface and was capped with a pressure-tight expansion plug and lock.

On March 4, 1994, the monitoring wells were developed using a stainless steel bailer until a minimum of three casing volumes of water were removed or the wells were bailed dry. On March 7, 1994, the static water levels were recorded at each monitoring well with a precision of 0.01 feet using an electronic water level indicator. Ground water samples were collected from each well location using a low-flow positive displacement sampling (Keck) pump. A minimum of three well casing volumes of water were removed from each well immediately prior to sample collection, with the exception of monitoring well TW-1. During sample collection at TW-1, the well was bailed dry upon removal of one well casing volume. Upon recovery of ground water to the well, a ground water sample was collected.

The ground water sampling equipment was decontaminated prior to sample collection at each monitoring well location. The ground water generated during well development and sampling

was containerized in 55-gallon drums and transported to the on-site retention area for future disposal.

3.3 SURVEY

On March 7, 1994, the location and ground surface and top-of-casing elevation of the soil boring/monitoring wells were surveyed in relation to the site grid and site benchmarks established during the Phase I field investigation. The locations were recorded with a 0.1-foot accuracy while elevations were recorded with a 0.01-foot accuracy.

3.4 LABORATORY TESTING

The soil and ground water samples collected during the Phase II field investigation were transported in iced coolers to the analytical laboratory for potential laboratory testing. Fourteen soil samples and five ground water samples were submitted for laboratory analysis. The soil samples selected for chemical testing were based on sample location, sample depth, soil description, and field screening results. The ground water samples collected from all monitoring wells were submitted for laboratory analyses.

4.0 RESULTS OF THE PHASE II INVESTIGATION

The hydrogeologic conditions and the soil and ground water quality at the site based on the results of the Phase II field investigation are summarized below.

4.1 HYDROGEOLOGIC CONDITIONS

The field observations recorded during drilling and sampling such as soil descriptions, field screening and static water elevations were recorded on the soil boring/well log sheets presented in Appendix A. The ground water elevation data obtained during sampling and surveying of the wells is summarized in Table 1.

4.1.1 SOIL

The soil at the site is generally sandy. The soils encountered are typified by 4 to 7 inches of peat, topsoil, gravel, and/or asphalt. This is underlain by 7 to 14.5 feet of fine to medium sand with a trace of silt and coarse sand and a trace amount of gravel. This is underlain by a medium to coarse sand unit with a trace amount of gravel of minimum thickness of 2.0 feet to the explored depth of 21 feet. Exceptions to this generalization were observed at SB-2, which

consisted of 5.5 feet of topsoil and peat; SB-1, which encountered clay at 5 feet below grade; and SB-5, which encountered a gravel layer at a depth of 10.5 to 13.5 feet.

4.1.2 GROUND WATER

The ground water conditions at the site consist of a saturated sand unit under unconfined conditions. Ground water was encountered at depths ranging from very near the surface to 14.0 feet below grade during drilling. Figure 4 is a March 7, 1994 ground water contour map constructed using a contour interval of 0.1 feet. Based on these measurements, the ground water flow direction is to the west-northwest with an average hydraulic gradient of 0.005 feet/feet. The ground water flow direction indicates the lowland area at the site appears to be in communication with, and recharging to ground water.

4.2 SOIL AND GROUND WATER QUALITY

The soil and ground water quality at the site was evaluated through PID field screening of soils, and laboratory analyses of soil and ground water samples. The laboratory analytical results for the soil and ground water samples were compared to cleanup criteria as described in this section.

For this evaluation, risk-based screening levels for chemicals in soils were established based on U.S. EPA guidance presented in the October 1991 document titled *Risk Assessment Guidance for Superfund: Volume I - Human Health Evaluation Manual (Part B, Development of Risk-based Preliminary Remediation Goals)* (PRG document). The PRG document presents methods for the derivation of risk-based cleanup criteria protective of exposure to chemicals in soil via the ingestion and inhalation exposure pathways. For this evaluation, soil screening levels were developed assuming commercial/industrial land use.

The screening levels for chemicals in ground water were established as the U.S. EPA Safe Drinking Water Maximum Contaminant Levels (MCLs). If an MCL was not available for a compound, a risk-based screening level was established for the compound according to the methods presented in the PRG document.

4.2.1 SOIL

Field screening and laboratory results of soil samples collected during drilling indicate the presence of low levels of VOC's in the soil. The field screening results were non-detect for

the majority of soil samples. Slightly elevated PID head-space readings (≥ 10 ppm)² were recorded for soil sample intervals associated with soil borings SB-2 (0 to 2 feet, 4 to 6 feet, 6 to 8 feet) and SB-3 (6 to 8 feet). The soil sample collected from the 6- to 8-foot interval at SB-4 had a PID reading of 400 ppm.² This soil sample was saturated as noted on the soil boring/well log (Appendix B).

Table 2 presents the analytical results for soils and compares those results to the soil risk-based screening levels. As shown on the table, five compounds (benzene, cis-1,2-dichloroethylene, trans-1,3-dichloropropene, toluene, and TCE) were detected in several soil samples. None of the five compounds were detected in unsaturated soil samples at concentrations exceeding their respective risk-based screening levels. The concentration of TCE in soil samples SB-4 (6 to 8 feet) at 38 mg/kg and SB-4 (8 to 10 feet) at 40 mg/kg exceeded its risk-based screening level of 17.3 mg/kg. However, these samples were saturated soils; therefore, the risk-based screening levels developed to be protective of direct human contact exposures to soils are not applicable to these saturated soil samples.

These five soil borings were placed in areas showing elevated responses during the soil gas survey; therefore, are considered to represent the most impacted soils in the area investigated. Because the low concentrations detected in soils do not appear to represent a continuing source of VOC impact at these "worst-case" locations, no further investigation regarding the soil quality is warranted.

4.2.2 GROUND WATER

Laboratory analysis of ground water samples collected from monitoring wells at the site indicate the presence of several VOC's, primarily TCE, in the ground water. Table 3 presents the analytical results for ground water samples and compares them to the ground water screening levels. As shown on the table, five organic compounds (dichlorodifluoromethane, cis-1,2-dichloroethylene, methylene chloride, TCE, and vinyl chloride) were detected in ground water at the site. With the exception of dichlorofluoromethane, each of the other four compounds exceeded its risk-based screening level in at least one monitoring well.

TCE was the most frequently detected compound in ground water at concentrations exceeding its ground water screening level. Specifically, TCE was present in monitoring wells TW-1, TW-2, TW-3, and TW-4 above its 5 $\mu\text{g/L}$ risk-based screening level at concentrations

²The PID field screening does not represent actual concentrations of specific VOC's, but is used to assess the relative levels of VOC's within similar soils containing similar compounds.

of 10.0 µg/L, 2600 µg/L, 6.6 µg/L, and 2900.0 µg/L, respectively. At monitoring well TW-1, methylene chloride was also detected in addition to TCE at a concentration of 14.0 µg/L, exceeding its risk-based screening level of 5.0 µg/L. Vinyl chloride and cis-1,2-dichloroethylene were detected in addition to TCE in monitoring well TW-2 at concentrations of 160.0 µg/L and 1700.0 µg/L exceeding their respective ground water screening levels of 2.0 µg/L and 70 µg/L. Figure 5 shows the distribution of these observed VOC concentrations in the ground water on-site.

An MCL has not been established by the U.S. EPA for dichlorofluoromethane. Additionally, a risk-based screening level could not be established for this compound since adequate toxicological data is not available. However, dichlorofluoromethane was detected in only one monitoring well (TW-5) at a concentration (1.3 µg/L) slightly exceeding its method detection limit (1.0 µg/L). Given the relatively low concentration and the fact that this compound was detected in only one monitoring well, dichlorofluoromethane does not appear to be a chemical of concern in ground water at the Selmer site.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The Phase II field investigation was designed to address the allegation of historical disposal of TCE on the east side of the manufacturing facility. The objective of this phase of work was to determine the nature and extent of VOC's, if any, in the soil and ground water based on the collection and laboratory analysis of soil and ground water samples to assess the potential for the area of alleged historical disposal to be a continuing source of the ground water impact that has been observed throughout the east Elkhart area.

Soils at the site are generally fine to coarse sands, with traces of silt and/or gravel. The water table was first encountered at depth from near the ground surface to 14.0 feet below grade during drilling. Based on water levels recorded on March 7, 1994, the ground water flow direction is to the west-northwest under an average hydraulic gradient of 0.005 feet/feet.

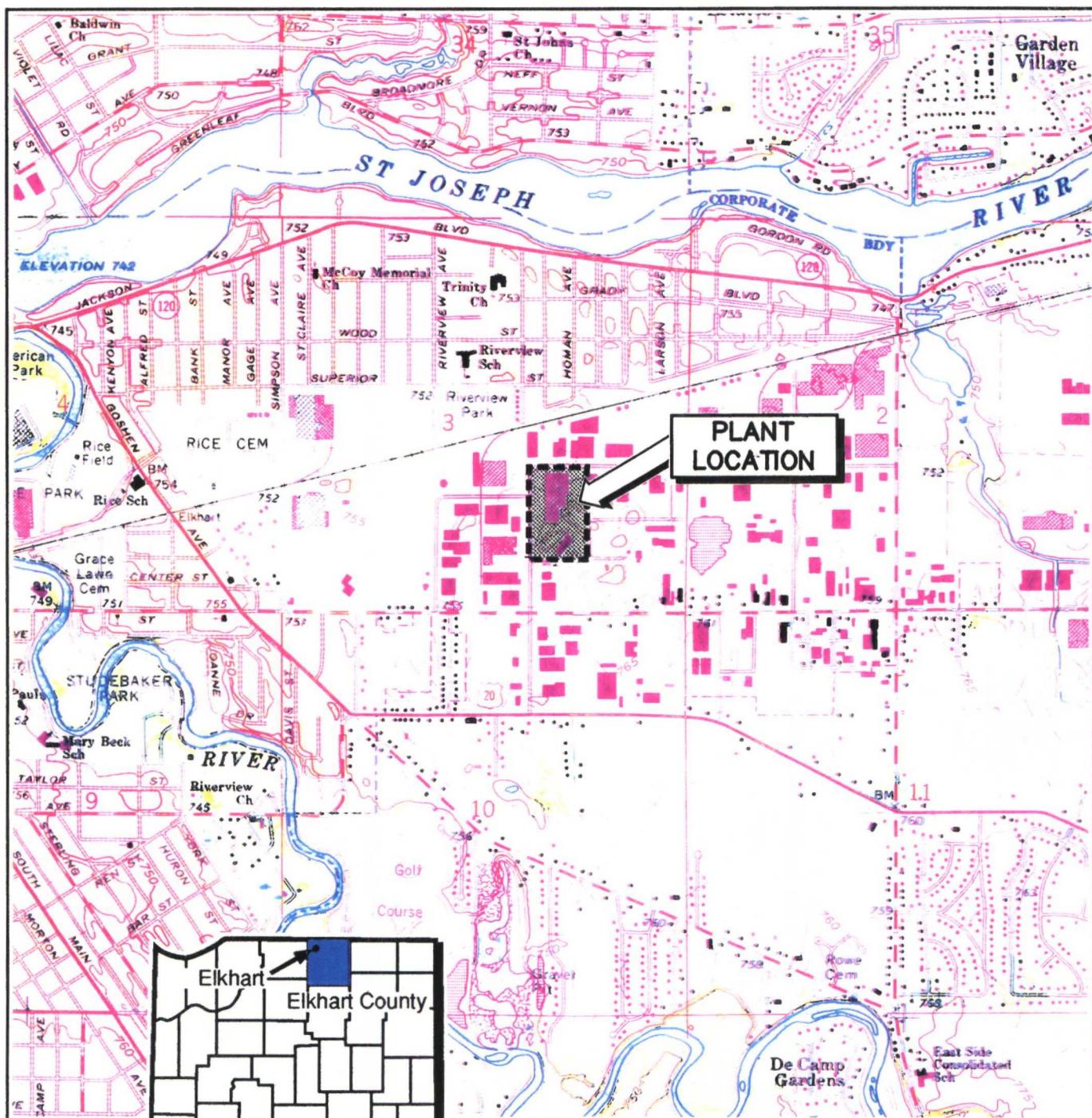
The unsaturated soil is not impacted with VOC's above risk-based screening levels. In addition, the soils were collected in the areas of elevated soil gas response so they represent the "worst-case" soils at the site. The combination of these two factors, demonstrates that no source of VOC's in the unsaturated soils exists at this site. Based on the expected soil-VOC interaction, the absence of VOC's further demonstrates that it is highly unlikely that significant soil impact was historically present on-site. If significant impact had occurred in the soils, remnants of these VOC's would have been detected in these "worst-case" soil areas.

Several monitoring wells that were sampled showed that the ground water contains low concentrations of TCE, as well as cis-1,2-DCE and vinyl chloride. These latter two compounds are degradation products of TCE. The low concentrations of the VOC's present in the ground water do not present a density contrast great enough to cause sinking of the contaminants; therefore, the concentrations are not expected to increase with depth, and there is no evidence for the presence of any dense non-aqueous phase liquid (DNAPL).

Given the low concentrations of VOC's in ground water and the absence of VOC impact in the unsaturated soils on-site, the observed ground water impact is thought to be either the result of upgradient impact flowing into the site, or the remnant of low levels of contaminants from on-site. Because of the presence of the degradation products of TCE, it is expected that these relatively low concentrations will further degrade over time.

Based on the lack of soil impact, the low concentrations of VOC's in ground water, and the expected continued natural degradation of the VOC's in ground water, it does not appear that this site is a source of significant ground water impact; therefore, no further investigations of this site are warranted.

FIGURES



Elkhart Quadrangle - USGS, 1981

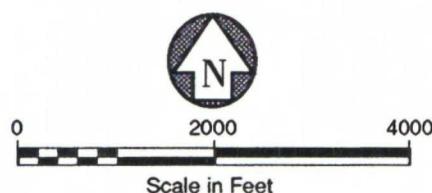
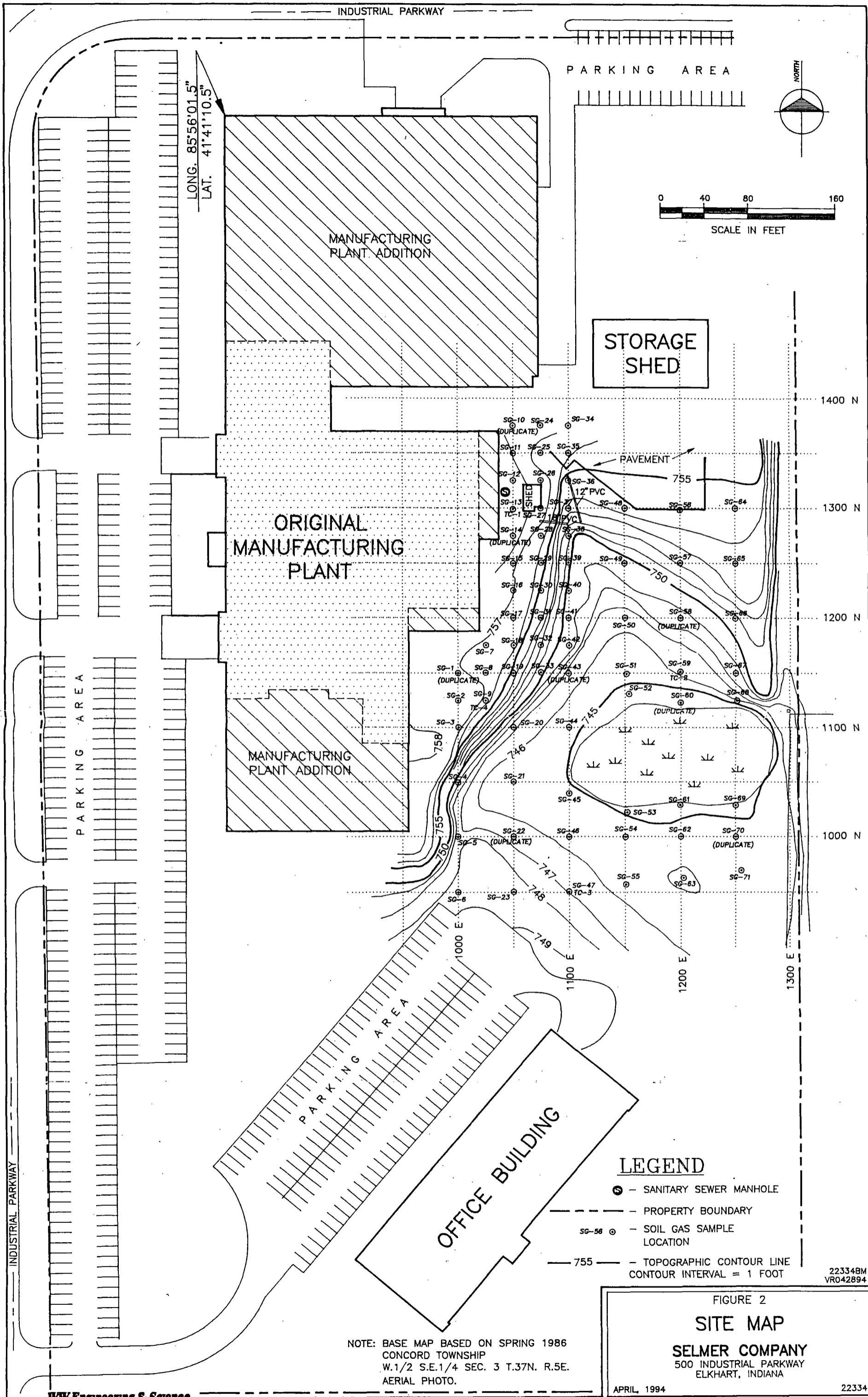
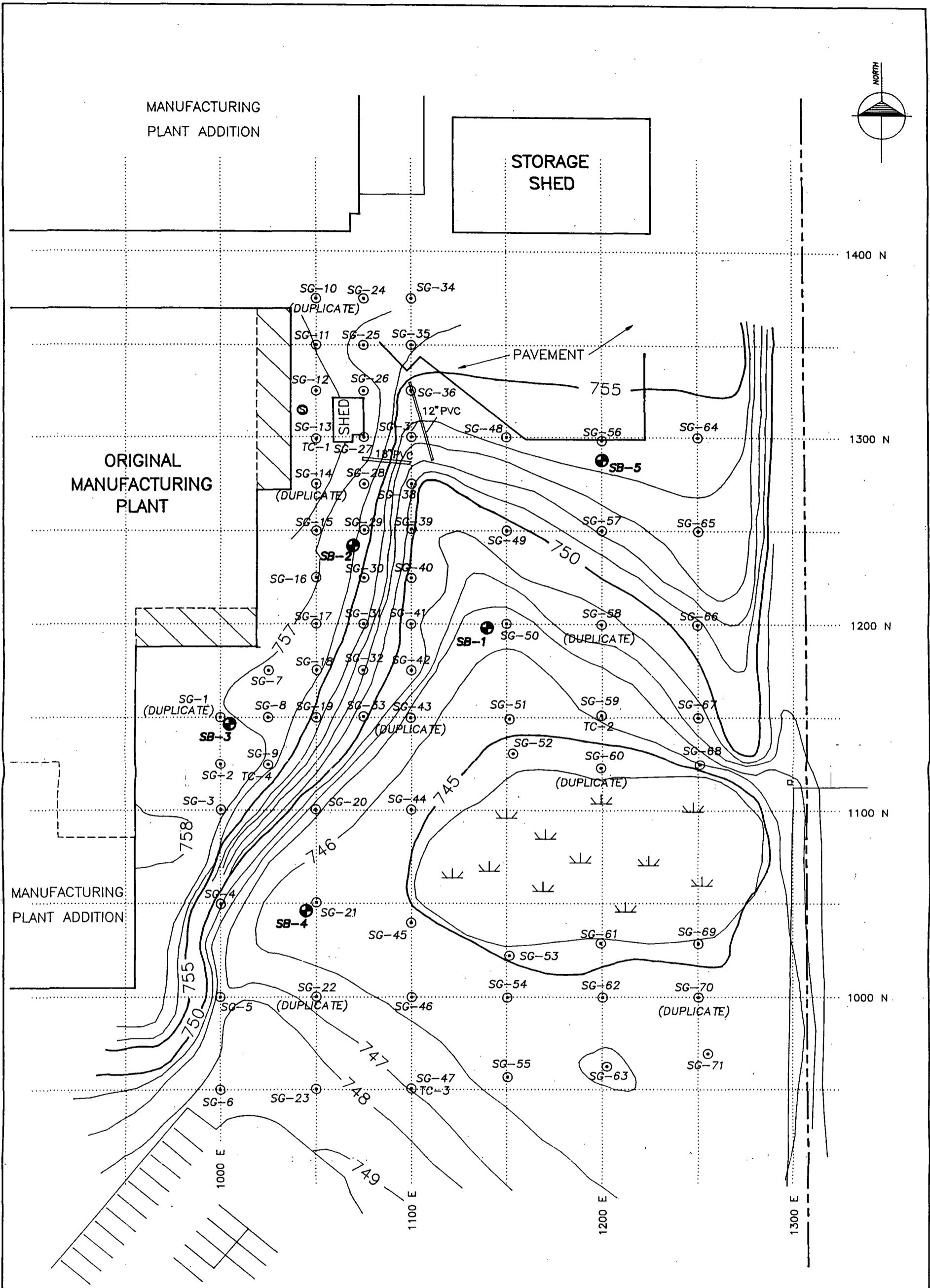


Figure 1
PLANT LOCATION MAP
The Selmer Company
 500 Industrial Parkway
 Elkhart, Indiana

July 1992

22334.00





LEGEND

S - SANITARY SEWER MANHOLE

A horizontal scale bar with tick marks at 0, 25, 50, and 100. Below the bar, the text "SCALE IN FEET" is centered.

22334-SB
VR041494

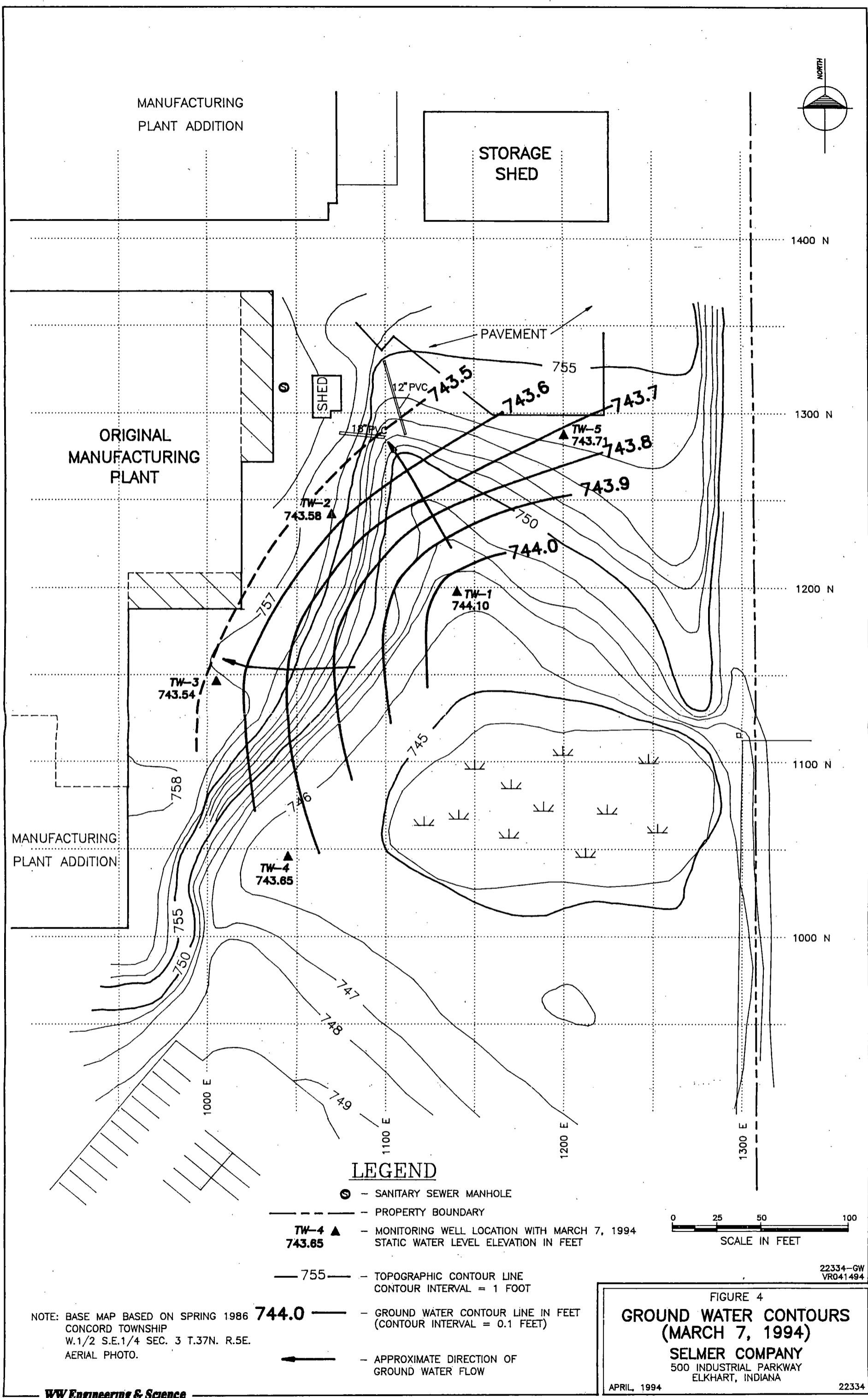
NOTE: BASE MAP BASED ON SPRING 1986
CONCORD TOWNSHIP
W.1/2 S.E.1/4 SEC. 3 T.37N. R.5E.
AERIAL PHOTO.

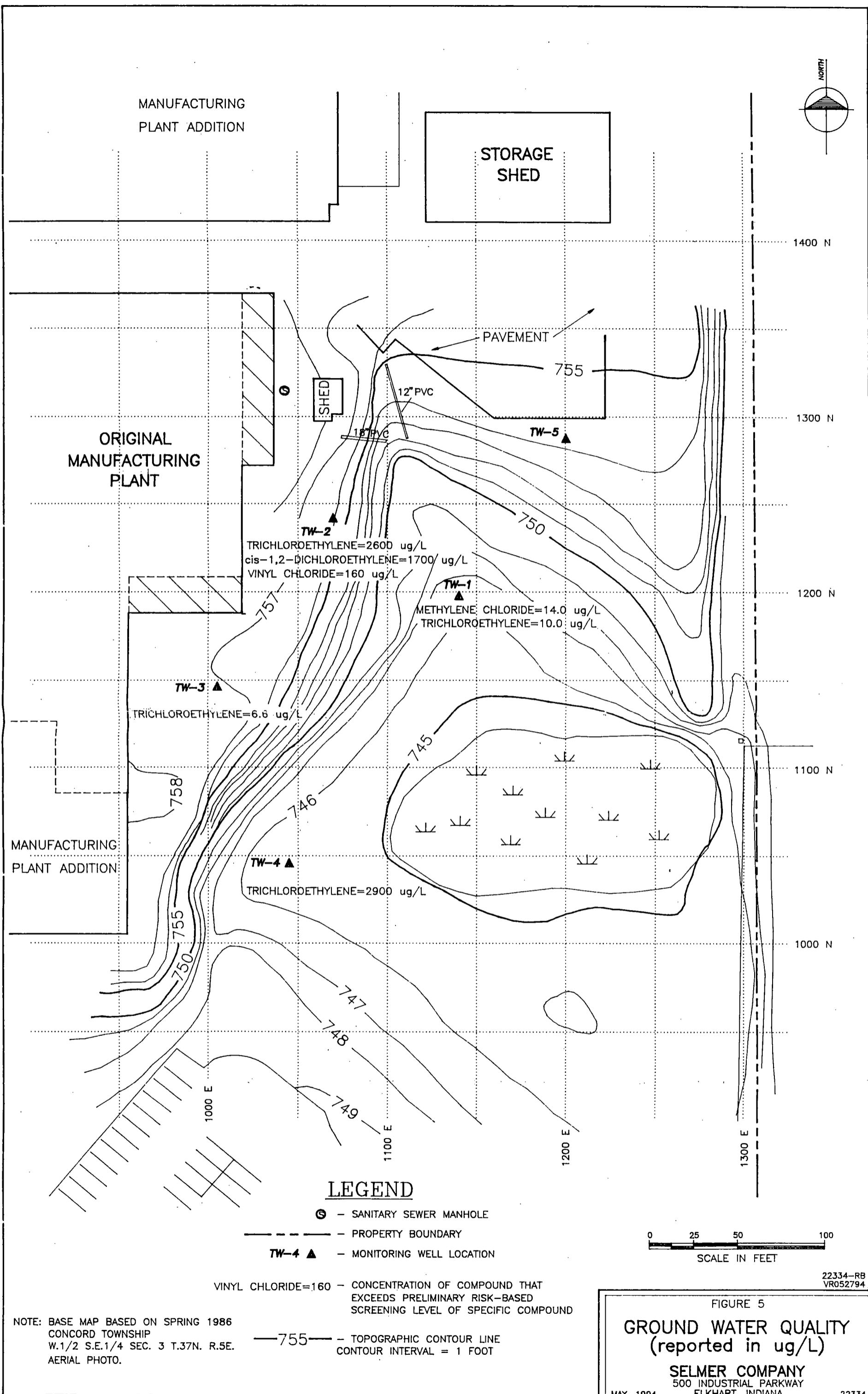
SB-1 (●) - SOIL BORING/MONITORING WELL LOCATION
SG-55 (○) - SOIL GAS SAMPLE
 LOCATION
 — 755 — - TOPOGRAPHIC CONTOUR LINE
 CONTOUR INTERVAL = 1 FOOT

FIGURE 3
SOIL BORING LOCATIONS
SELMER COMPANY
500 INDUSTRIAL PARKWAY
ELKHART, INDIANA

APRIL, 1994

22334





TABLES

Table 1
Summary of Monitoring Well Elevation Data
Selmer Company
500 Industrial Parkway
Elkhart, Indiana
Units as Given

Monitoring Well Identification	Well Screen Interval	Top of Casing Elevation	Depth to Water Table	Water Table Elevation
			March 7, 1994	March 7, 1994
TW-1	0.0-5.0	749.00	4.90	744.10
TW-2	10.5-20.5	758.85	15.27	743.58
TW-3	11.0-21.0	758.38	14.84	743.54
TW-4	0.0-10.0	747.92	4.27	743.65
TW-5	7.5-17.5	756.45	12.47	743.98

All numerical values are reported in units of feet.

Table 2
Analytical Results of Soil Samples
Selmer Company
500 Industrial Parkway
Elkhart, Indiana
Units as Given

Site Identification:		SB-1	SB-1	SB-2	SB-2	SB-2
Sample Identification:	Preliminary	E80611 3/3/94	E80612 3/3/94	E80613 3/2/94	E80614 3/2/94	Duplicate E80621 3/2/94
Date Sampled:	Risk-based	WWES	WWES	WWES	WWES	WWES
Sampled By:	Screening	WWES	WWES	WWES	WWES	WWES
Analyzed By:	Levels*	2-4	4-6	4-6	6-8	6-8
Depth: (feet)						
Parameters	Units					
Benzene	mg/kg	22	< 0.010	< 0.010	1.100	< 0.010
Dibromochloromethane	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
Bromoform	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
Bromomethane	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
Carbon tetrachloride	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
Chlorobenzene	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
Chloroethane	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
2-Chloroethylvinyl ether	mg/kg	-	< 0.100	< 0.100	< 0.500	< 0.100
Chloroform	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
Chloromethane	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
Dichlorobromomethane	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
1,2-Dichlorobenzene	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
1,3-Dichlorobenzene	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
1,4-Dichlorobenzene	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
Dichlorodifluoromethane	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
1,1-Dichloroethane	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
1,2-Dichloroethane	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
1,1-Dichloroethylene	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
trans-1,2-Dichloroethylene	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
cis-1,2-Dichloroethylene	mg/kg	20,000	< 0.010	< 0.010	< 0.050	0.077 0.012
1,2-Dichloropropane	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
cis-1,3-Dichloropropene	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
trans-1,3-Dichloropropene	mg/kg	31.8	< 0.010	< 0.010	< 0.050	< 0.010
Ethylbenzene	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
Methylene chloride	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
1,1,2,2-Tetrachloroethane	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
Tetrachloroethylene	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
Toluene	mg/kg	5,900	MS DP< 0.010	< 0.010	< 0.050	< 0.010
1,1,1-Trichloroethane	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
1,1,2-Trichloroethane	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
Trichloroethylene	mg/kg	17.3	< 0.010	< 0.010	< 0.050	0.880 0.170
Trichlorofluoromethane	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
Vinyl chloride	mg/kg	-	< 0.010	< 0.010	< 0.050	< 0.010
Xylene, total	mg/kg	-	< 0.030	< 0.030	< 0.150	< 0.030
Percent solids	%		85	74	88	89

* = Preliminary risk-based screening level protective of direct human contact exposures with soil (ingestion and inhalation exposures) under the commercial/industrial land use scenario.

Shaded values are in exceedance of risk-based screening levels.
Bolded values are a detection of a compound above the laboratory method detection limit.
DP = Duplicate analysis value outside established acceptable limits.
MS = Matrix spike sample value outside established acceptable limits.

Table 2
Analytical Results of Soil Samples
Selmer Company
500 Industrial Parkway
Elkhart, Indiana
Units as Given

Site Identification:			SB-2	SB-3	SB-3	SB-3	SB-4
Sample Identification:		E80615	E80616	E80617	E80618	E80910	
Date Sampled:	Preliminary	3/2/94	3/3/94	3/3/94	3/3/94	3/10/94	
Sampled By:	Risk-based	WWES	WWES	WWES	WWES	WWES	
Analyzed By:	Screening	WWES	WWES	WWES	WWES	WWES	
Depth: (feet)	Levels*	8-10	4-6	6-8	8-10	8-10	4-6
Parameters	Units						
Benzene	mg/kg	22	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Dibromochloromethane	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Bromoform	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Bromomethane	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Carbon tetrachloride	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Chlorobenzene	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Chloroethane	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
2-Chloroethylvinyl ether	mg/kg	-	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
Chloroform	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Chloromethane	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Dichlorobromomethane	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
1,2-Dichlorobenzene	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
1,3-Dichlorobenzene	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
1,4-Dichlorobenzene	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Dichlorodifluoromethane	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
1,1-Dichloroethane	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
1,2-Dichloroethane	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
1,1-Dichloroethylene	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
trans-1,2-Dichloroethylene	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
cis-1,2-Dichloroethylene	mg/kg	20,000	0.078	< 0.010	< 0.010	< 0.010	< 0.010
1,2-Dichloropropane	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
cis-1,3-Dichloropropene	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
trans-1,3-Dichloropropene	mg/kg	31.8	0.019	< 0.010	< 0.010	< 0.010	< 0.010
Ethylbenzene	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Methylene chloride	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
1,1,2,2-Tetrachloroethane	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Tetrachloroethylene	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Toluene	mg/kg	5,900	0.054	0.010	< 0.010	0.013	< 0.010
1,1,1-Trichloroethane	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
1,1,2-Trichloroethane	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Trichloroethylene	mg/kg	17.3	0.510	0.092	0.820	0.016	0.220
Trichlorofluoromethane	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Vinyl chloride	mg/kg	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Xylene, total	mg/kg	-	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030
Percent solids	%	-	90	89	87	92	83

* = Preliminary risk-based screening level
protective of direct human contact exposures
with soil (ingestion and inhalation exposures)
under the commercial/industrial land use
scenerio.

Shaded values are in exceedance of risk-based screening levels.
Bolded values are a detection of a compound above the laboratory
method detection limit.

Table 2
Analytical Results of Soil Samples
Selmer Company
500 Industrial Parkway
Elkhart, Indiana
Units as Given

Site Identification:		SB-4	SB-4	SB-4	SB-5	SB-5
			Duplicate		E80619	E80620
Sample Identification:		E80911	E80912	E80913	E80619	E80620
Date Sampled:	Preliminary	3/10/94	3/10/94	3/10/94	3/2/94	3/2/94
Sampled By:	Risk-based	WWES	WWES	WWES	WWES	WWES
Analyzed By:	Screening	WWES	WWES	WWES	WWES	WWES
Depth: (feet)	Levels*	6-8	6-8	8-10	4-6	8-10
Parameters	Units					
Benzene	mg/kg	22	< 2.0	< 2.0	< 0.010	< 0.010
Dibromochloromethane	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
Bromoform	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
Bromomethane	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
Carbon tetrachloride	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
Chlorobenzene	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
Chloroethane	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
2-Chloroethylvinyl ether	mg/kg	-	< 20.0	< 20.0	< 0.100	< 0.100
Chloroform	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
Chloromethane	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
Dichlorobromomethane	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
1,2-Dichlorobenzene	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
1,3-Dichlorobenzene	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
1,4-Dichlorobenzene	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
Dichlorodifluoromethane	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
1,1-Dichloroethane	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
1,2-Dichloroethane	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
1,1-Dichloroethylene	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
trans-1,2-Dichloroethylene	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
cis-1,2-Dichloroethylene	mg/kg	20,000	< 2.0	< 2.0	< 0.010	< 0.010
1,2-Dichloropropane	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
cis-1,3-Dichloropropene	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
trans-1,3-Dichloropropene	mg/kg	31.8	< 2.0	< 2.0	< 0.010	< 0.010
Ethylbenzene	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
Methylene chloride	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
1,1,2,2-Tetrachloroethane	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
Tetrachloroethylene	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
Toluene	mg/kg	5,900	< 2.0	< 2.0	< 0.010	< 0.010
1,1,1-Trichloroethane	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
1,1,2-Trichloroethane	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
Trichloroethylene	mg/kg	17.3	38.0	27.0	40.0	< 0.010
Trichlorofluoromethane	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
Vinyl chloride	mg/kg	-	< 2.0	< 2.0	< 0.010	< 0.010
Xylene, total	mg/kg	-	< 6.0	< 6.0	< 6.0	< 0.030
Percent solids	%		86	87	86	96
						94

* = Preliminary risk-based screening level
protective of direct human contact exposures
with soil (ingestion and inhalation exposures)
under the commercial/industrial land use
scenario.

Shaded values are in exceedance of risk-based screening levels.
Bolded values are a detection of a compound above the laboratory
method detection limit.

Table 3
Analytical Results of Ground Water Samples
Selmer Company
500 Industrial Parkway
Elkhart, Indiana
Units as Given

Site Identification:		TW-1	TW-2	TW-3	TW-4	TW-5	
Sample Identification:		E80626	E80623	E80624	E80625	E80622	
Date Sampled:	Preliminary	3/7/94	3/7/94	3/7/94	3/7/94	3/7/94	
Sampled By:	Risk-based	WWES	WWES	WWES	WWES	WWES	
Analyzed By:	Screening	WWES	WWES	WWES	WWES	WWES	
Depth: (feet)	Levels	0-5	10.5-20.5	11-21	0-10	7.5-17.5	
Parameters	Units						
Benzene	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
Dibromochloromethane	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
Bromoform	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
Bromomethane	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
Carbon tetrachloride	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
Chlorobenzene	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
Chloroethane	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
2-Chloroethylvinyl ether	ug/L	-	< 10.0	< 500.0	< 10.0	< 500.0	< 10.0
Chloroform	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
Chloromethane	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
Dichlorobromomethane	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
1,2-Dichlorobenzene	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
1,3-Dichlorobenzene	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
1,4-Dichlorobenzene	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
Dichlorodifluoromethane	ug/L	NA	< 1.0	< 50.0	< 1.0	< 50.0	1.3
1,1-Dichloroethane	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
1,2-Dichloroethane	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
1,1-Dichloroethylene	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
trans-1,2-Dichloroethylene	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
cis-1,2-Dichloroethylene	ug/L	70	< 1.0	1700.0	< 1.0	< 50.0	< 1.0
1,2-Dichloropropane	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
cis-1,3-Dichloropropene	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
trans-1,3-Dichloropropene	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
Ethylbenzene	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
Methylene chloride	ug/L	5.0	14.0	< 50.0	< 1.0	< 50.0	< 1.0
1,1,2,2-Tetrachloroethane	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
Tetrachloroethylene	ug/L	5.0	< 1.0	< 50.0	2.3	< 50.0	< 1.0
Toluene	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
1,1,1-Trichloroethane	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
1,1,2-Trichloroethane	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
Trichloroethylene	ug/L	5.0	10.0	2600.0	6.6	2900.0	< 1.0
Trichlorofluoromethane	ug/L	-	< 1.0	< 50.0	< 1.0	< 50.0	< 1.0
Vinyl chloride	ug/L	2.0	< 1.0	160.0	< 1.0	< 50.0	< 1.0
Xylene, total	ug/L	-	< 3.0	< 150.0	< 3.0	< 150.0	< 3.0

NA = A risk-based screening level is not available for this compound.

Shaded values are in exceedance of risk-based screening levels.
Bolted values are a detection of a compound above the laboratory method detection limit.

Table 3
Analytical Results of Ground Water Samples
Selmer Company
500 Industrial Parkway
Elkhart, Indiana
Units as Given

Site Identification:		Preliminary Risk-based Screening	Trip Blank	Trip Blank	Equipment Rinse Blank @ SB-1, 4-6'
			E80629 3/2/94	E80627 3/7/94	E80628 3/3/94
Sample Identification:					WWES
Date Sampled:					WWES
Sampled By:		WWES	WWES	WWES	WWES
Analyzed By:					WWES
Depth: (feet)		Levels	-	-	4-6
Parameters	Units				
Benzene	ug/L		< 1.0	< 1.0	< 1.0
Dibromochloromethane	ug/L		< 1.0	< 1.0	< 1.0
Bromoform	ug/L		< 1.0	< 1.0	< 1.0
Bromomethane	ug/L		< 1.0	< 1.0	< 1.0
Carbon tetrachloride	ug/L		< 1.0	< 1.0	< 1.0
Chlorobenzene	ug/L		< 1.0	< 1.0	< 1.0
Chloroethane	ug/L		< 1.0	< 1.0	< 1.0
2-Chloroethylvinyl ether	ug/L		< 10.0	< 10.0	< 10.0
Chloroform	ug/L		< 1.0	< 1.0	< 1.0
Chloromethane	ug/L		< 1.0	< 1.0	< 1.0
Dichlorobromomethane	ug/L		< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	ug/L		< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	ug/L		< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	ug/L		< 1.0	< 1.0	< 1.0
Dichlorodifluoromethane	ug/L	NA	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	ug/L		< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	ug/L		< 1.0	< 1.0	< 1.0
1,1-Dichloroethylene	ug/L		< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethylene	ug/L		< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethylene	ug/L	70	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	ug/L		< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	ug/L		< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	ug/L		< 1.0	< 1.0	< 1.0
Ethylbenzene	ug/L		< 1.0	< 1.0	< 1.0
Methylene chloride	ug/L	5.0	< 1.0	< 1.0	1.3
1,1,2,2-Tetrachloroethane	ug/L		< 1.0	< 1.0	< 1.0
Tetrachloroethylene	ug/L	5.0	< 1.0	< 1.0	< 1.0
Toluene	ug/L		< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	ug/L		< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	ug/L		< 1.0	< 1.0	< 1.0
Trichloroethylene	ug/L	5.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	ug/L		< 1.0	< 1.0	< 1.0
Vinyl chloride	ug/L	2.0	< 1.0	< 1.0	< 1.0
Xylene, total	ug/L		< 3.0	< 3.0	< 3.0

NA = A risk-based screening level is not available for this compound.

Shaded values are in exceedance of risk-based screening levels.

Bolded values are a detection of a compound above the laboratory method detection limit.

Appendix A

Soil Boring/Well Logs



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Page: 1 of 2

Well/Boring No. SB-1

Client: Selmer

Project No.: 22334.00

Date: Started: 03/03/94

Time: Started: 02:15 PM

Section 10

Well/Boring Log Sheet

State	County	Township	Fraction	Section	T	R
IL	Elkhart	Concord	W 1/2 SE 1/4	3	37N	5E

Contractor: Stearns Drilling Co.

Address: 6974 Hammond St.

Dutton, MI 49316

Equipment: CME-850 (ATV)

Crew Chief: Rich Bennett

WW Supervisor: Don Johnson

Grouting/Seal

Creating Scan Depth/To Material/Method

See log of well installation

For more information about the National Institute of Child Health and Human Development, please visit our website at www.nichd.nih.gov.

Drilling Method(s)	Depth
4-1/4" ID HSA	6.0'

**Ground Surface
Elevation (feet):**

746.60

Remarks: Split spoon equipment blank collected before the 4'-6' split spoon at 2:30 p.m.

Water Level: 0.0' ft. Below Grade

Thickness (feet)	Depth to base (feet)	USCS *	Lithologic Description
0.3	0.3	PT	PEAT, sticks, leaves, wet
1.7	2.0	SP	SAND, very fine to fine, little peat, black, very soft, wet
3.0	5.0	SM	SAND, very fine to medium, some silt, trace marl, black, slightly moist to wet
1.0	6.0	CL	CLAY, very silty, trace medium black sand, gray/greenish gray, very soft, dry

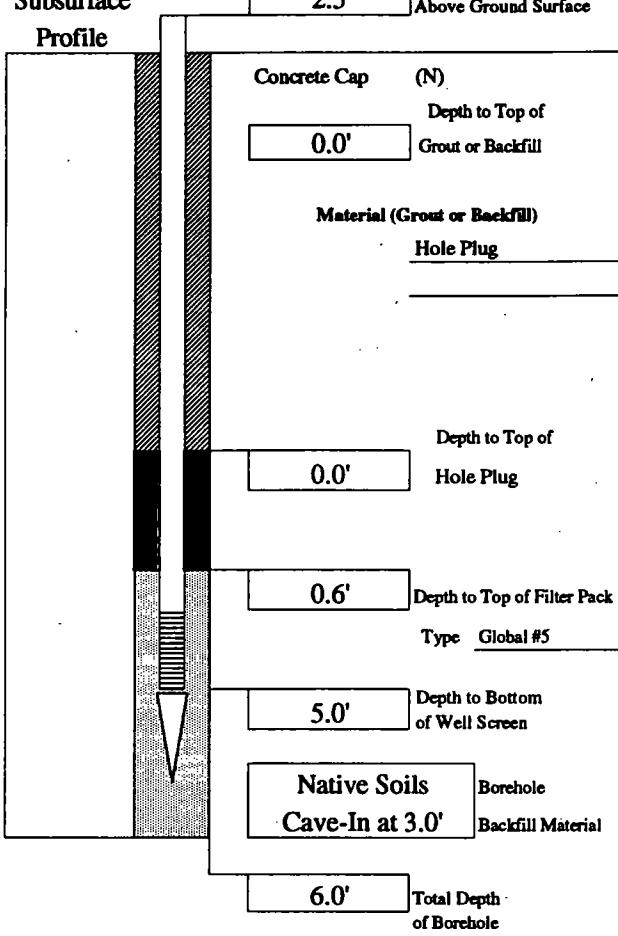
EOB @ 6'

* = The USCS symbol assigned is based on visual and manual observations and not on tests performed in the laboratory.

Log of Well Installation

Well Number: TW-1

Generalized
Subsurface
Profile



Top of Casing
Elevation (feet): 749.00

Water Level Data

Date	Time	Water Level	Elevation
3/4/94		3.73 Pre-Development	745.27
3/7/94		4.90 Stabilized	744.10

Development: 4 gal. (bailed dry 4x) - S.S. Bailer - silty due to native soils collapse around screen.

Survey Reference: 755.88' (1325.2N, 1102.0E) R.R. spike: E side of power pole, E of shed.

Well
Casing

Diameter: 2"
Length: 2.5'
Material: PVC
Cap Type: J-Plug

Well
Screen

Diameter: 2"
Length: 5'
Slot/Type: 10 Slot w/end cap
Material: PVC

Protective
well casing

Material: N/A Dia. N/A
Height Above
Ground: N/A
Lock Type: N/A

General Notes: Temporary well set in borehole of SB-1.



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Page: 1 of 2

Well/Boring No. SB-2

Client: Selmer

Project No.: 22334.00

Date: Started: 03/02/94 Finished: 03/02/94

Time: Started: 04:30 PM Finished: 06:15 PM

Well/Boring Log Sheet

State IL	County Elkhart	Township Concord	Fraction W 1/2 SE 1/4	Section 3	T 37N	R SE
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Contractor: Stearns Drilling Co.

Address: 6974 Hammond St.
Dutton, MI 49316

Equipment: CME-850 (ATV)

Crew Chief: Rich Bennett

Location: See soil boring location map (1242.7N, 1069.1E).

Drilling Method(s)	Depth
<u>4-1/4" ID HSA</u>	<u>20.5'</u>

Ground Surface Elevation (feet):

756.65

Grouting/Seal

Depth/To **Material/Method**
0.0-20.5' See log of well installation

Remarks:

Water Level: 13.5 ft Below Grade

* = The USCS symbol assigned is based on visual and manual observations and not on tests performed in the laboratory.



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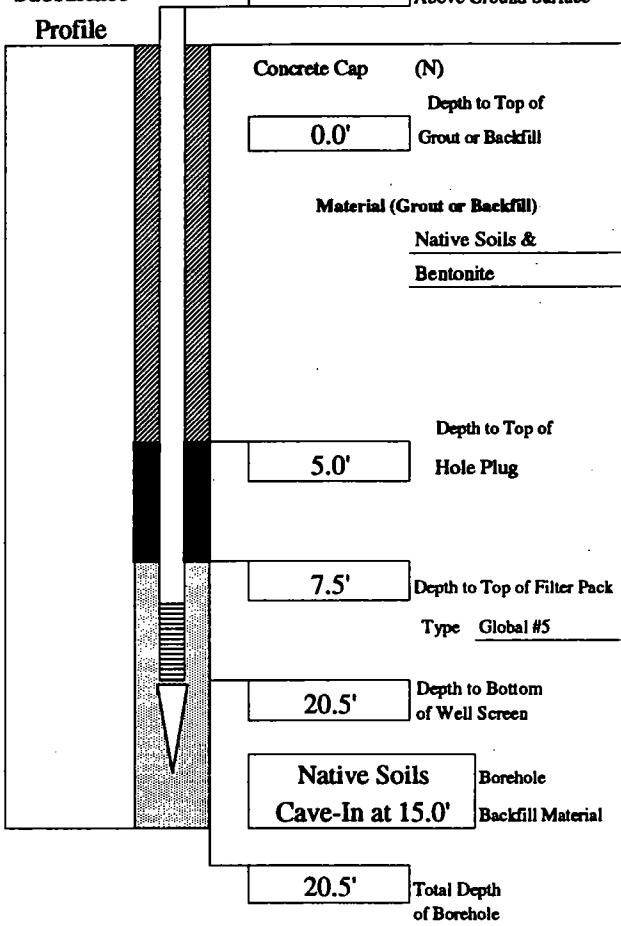
Project Name: Selmer

Project No: 22334.00

Log of Well Installation

Well Number: TW-2

Generalized
Subsurface
Profile



Top of Casing
Elevation (feet): 758.85

Water Level Data

Date	Time	Water Level	Elevation
3/3/94		15.44 Pre-Development	743.41
3/7/94		15.27 Stabilized	743.58

Development: 40 gal. - S.S. Bailer - silty due to native soils collapse around screen.

Survey Reference: 755.88' (1325.2N, 1102.0E) R.R. spike:
E side of power pole, E of shed.

Well
Casing

Diameter: 2"
Length: 12.5'
Material: PVC
Cap Type: J-Plug

Well
Screen

Diameter: 2"
Length: 10'
Slot/Type: 10 Slot/Continuous Wound
Material: PVC

Protective
well casing

Material: N/A Dia. N/A
Height Above
Ground: N/A
Lock Type: N/A

General Notes: Temporary well set in borehole of SB-2.



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A Summit Company

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Well/Boring No. SB-3

Client: Selmer

Project No.: 22334.00

Date: Started: 03/03/94 Finished: 03/03/94

Time: Started: 09:15 AM Finished: 11:00 AM

Well/Boring Log Sheet

State IL	County Elkhart	Township Concord	Fraction W 1/2 SE 1/4	Section 3	T 37N	R 5E
-------------	-------------------	---------------------	--------------------------	--------------	----------	---------

Contractor: Stearns Drilling Co.

Address: 6974 Hammond St.
Dutton, MI 49316

Equipment: GME-850 (ATV)

Crew Chief: Rich Bennett

Location: See soil boring location map (1147.4N, 1005.3E).

Drilling Method(s)	Depth
4-1/4" ID HSA	21.0'

Ground Surface Elevation (feet):

757.08

Grouting/Seal

Depth/To **Material/Method**
0.0-21.0' See log of well installation

Remarks:

Water Level: 14.0 ft. Below Grade

Thickness (feet)	Depth to base (feet)	USCS *	Lithologic Description
0.4	0.4	AS	ASPHALT
2.6	3.0	GW	GRAVEL, fine to medium, some medium to fine sand, little coarse sand, bro.
2.5	5.5	SP	SAND, fine to medium, trace fine gravel, dark brown, dry
3.0	8.5	SW	SAND, fine to medium, little fine gravel, trace silt, dry, brown, dry
2.5	11.0	SW	SAND, fine to medium, little silt, trace fine gravel, dark brown, dry
2.0	13.0	SP	SAND, fine to medium, tan, dry
4.5	17.5	SW	SAND, fine to medium, some fine to medium gravel, trace silt, brown, wet
3.5	21.0	GW	GRAVEL, fine to medium, some fine to coarse sand, brown, wet

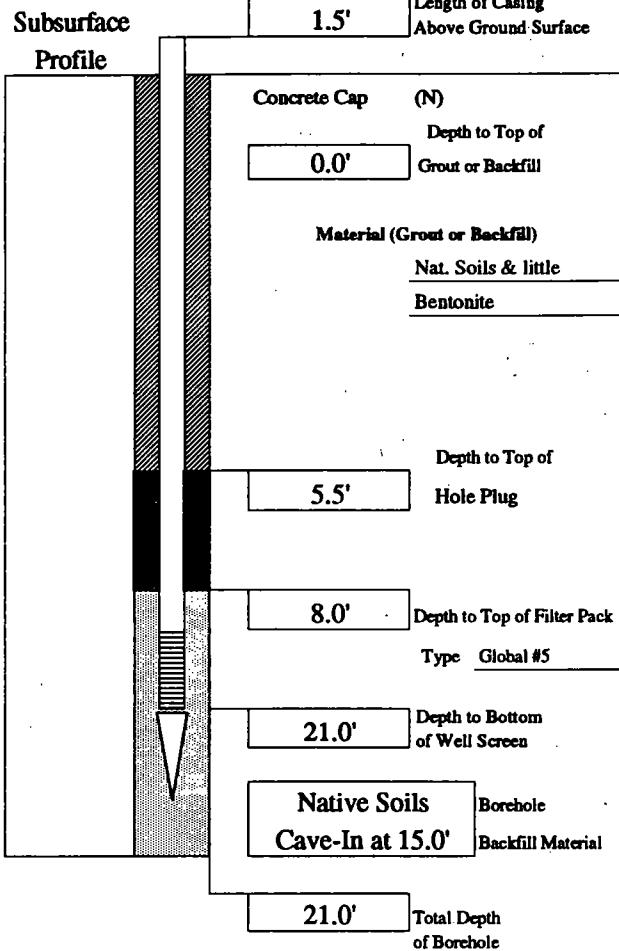
EOB @ 21'

* = The USCS symbol assigned is based on visual and manual observations and not on tests performed in the laboratory.

Log of Well Installation

Well Number: TW-3

Generalized Subsurface Profile



Top of Casing
Elevation (feet): 758.38

Water Level Data

Date	Time	Water Level	Elevation
3/4/94		14.88 Pre-Development	743.50
3/7/94		14.84 Stabilized	743.54

Development: 40 gal. - S.S. Bailer - silty due to native soils collapse around screen.

Survey Reference: 755.88' (1325.2N, 1102.0E) R.R. spike: E side of power pole, E of shed.

Well Casing

Diameter: 2"
Length: 12.5'
Material: PVC
Cap Type: J-Plug

Well Screen

Diameter: 2"
Length: 10'
Slot/Type: 10 Slot
Material: PVC

Protective well casing

Material: N/A Dia. N/A
Height Above Ground: N/A
Lock Type: N/A

General Notes: Temporary well set in borehole of SB-3.



Page: 1 of 2

Well/Boring No. SB-4

Client: Selmer

Project No.: 22334.00

Date: Started: 03/03/94

Time: Started: 11:30 AM

Well/Boring Log Sheet

State IL	County Elkhart	Township Concord	Fraction W 1/2 SE 1/4	Section 3	T 37N	R 5E
-------------	-------------------	---------------------	--------------------------	--------------	----------	---------

Contractor: Stearns Drilling Co.

Address: 6974 Hammond St.
Dutton, MI 49316

Equipment: CME-850 (ATV)

Crew Chief: Rich Bennett

www.EasyEngineering.net

Grouting/Seal
Depth/To Material/Method
0.0-10.0' See log of well installation

Remarks:

Water Level: 2.8 ft. Below Grade

Drilling Method(s)

Depth

Ground Surface Elevation (feet):

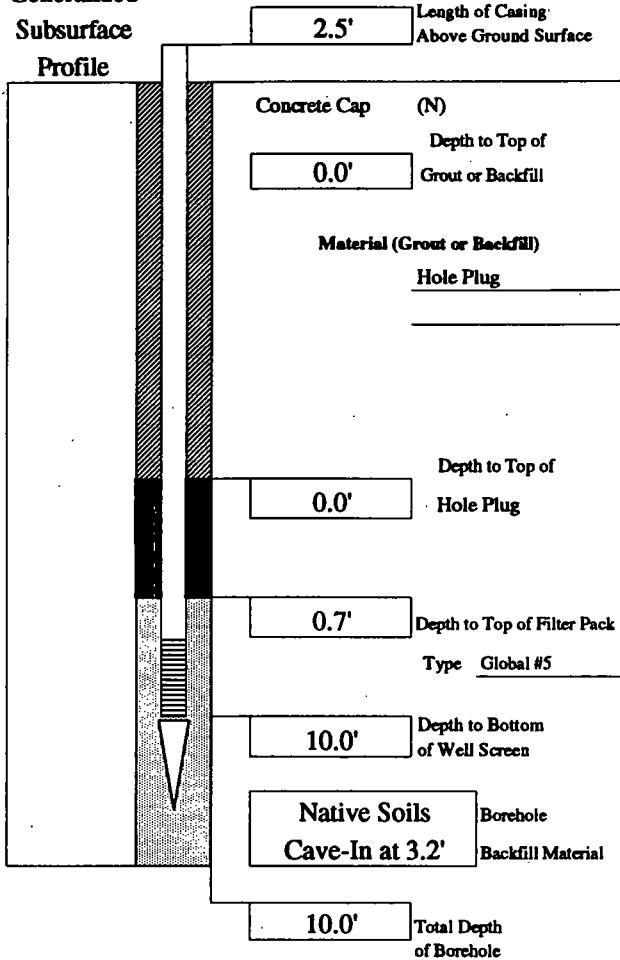
745.62

* = The USCS symbol assigned is based on visual and manual observations and not on tests performed in the laboratory.

Log of Well Installation

Well Number: TW-4

Generalized
Subsurface
Profile



Top of Casing
Elevation (feet): 747.92

Water Level Data

Date	Time	Water Level	Elevation
3/4/94		4.29 Pre-Development	743.63
3/7/94		4.27 Stabilized	743.65

Development: 40 gal. - S.S. Bailer - silty due to native soils collapse around screen.

Survey Reference: 755.88' (1325.2N, 1102.0E) R.R. spike:
E side of power pole, E of shed.

Well
Casing

Diameter: 2"
Length: 2.5'
Material: PVC
Cap Type: J-Plug

Well
Screen

Diameter: 2"
Length: 10'
Slot/Type: 10 Slot
Material: PVC

Protective
well casing

Material: N/A Dia. N/A
Height Above
Ground: N/A
Lock Type: N/A

General Notes: Temporary well set in borehole of SB-4.



WW Engineering & Science

A Summit Company

Page: 1 of 2

Well/Boring No. SB-5

Client: Selmer

Project No.: 22334.00

Date: Started: 03/02/94 Finished: 03/02/94

Time: Started: 01:30 PM Finished: 03:00 PM

Well/Boring Log Sheet

State IL	County Elkhart	Township Concord	Fraction W 1/2 SE 1/4	Section 3	T 37N	R 5E
-------------	-------------------	---------------------	--------------------------	--------------	----------	---------

Contractor: Stearns Drilling Co.

Address: 6974 Hammond St.

Dutton, MI 49316

Equipment: CME-850 (ATV)

Crew Chief: Rich Bennett

WW Supervisor: Don Johnson

Location: See soil boring location map (1287.5N, 1199.6E).

Drilling Method(s)	Depth
<u>4-1/4" ID HSA</u>	<u>18.0'</u>

Ground Surface Elevation (feet):

753.95

Grouting/Seal

Depth/To **Material/Method**

0.0-18.0' See log of well installation

Remarks:

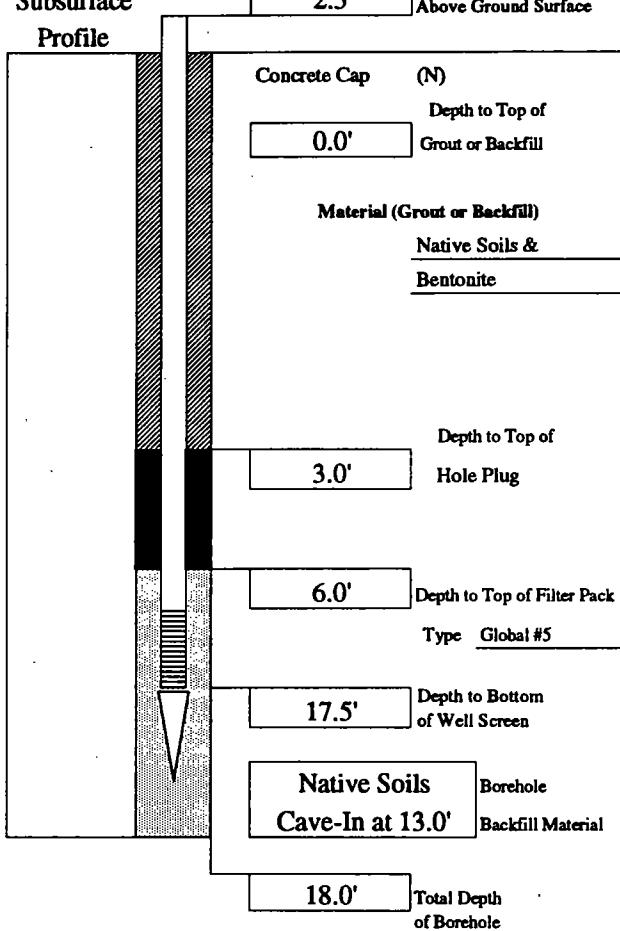
Water Level: 10.6 ft. Below Grade

* = The USCS symbol assigned is based on visual and manual observations and not on tests performed in the laboratory.

Log of Well Installation

Well Number: TW-5

Generalized
Subsurface
Profile



Top of Casing
Elevation (feet): 756.45

Water Level Data

Date	Time	Water Level	Elevation
3/3/94		12.67 Pre-Development	743.78
3/7/94		12.47 Stabilized	743.98

Development: 30 gal. - S.S. Bailer - relatively sediment free
(natural collapse around screen)

Survey Reference: 755.88' (1325.2N, 1102.0E) R.R. spike:
E side of power pole, E of shed.

Well
Casing

Diameter: 2"
Length: 10'
Material: PVC
Cap Type: J-Plug

Well
Screen

Diameter: 2"
Length: 10'
Slot/Type: 10 Slot
Material: PVC

Protective
well casing

Material: N/A Dia. N/A
Height Above
Ground: N/A
Lock Type: N/A

General Notes: Temporary well set in borehole of SB-5.

Appendix B

Laboratory Analytical Reports

STATEMENT OF DATA QUALIFICATIONS

CLIENT: Selmer Company

SUBMITTAL: 32169-1

- All analyses have been validated and comply with our Quality Control Program. No qualifications required.
- The following analyses have been qualified for the reasons cited.

Sample No.(s): 80611 Parameter: Toluene Reason: 5, 6

Explanation: _____

KEY

1. Sample integrity suspect upon receipt (explain).
2. Analysis performed beyond EPA established maximum allowable holding time.
3. Detection limit elevated due to matrix interferences.
4. Laboratory control sample value outside established acceptable limits.
5. Matrix spike sample value outside established acceptable limits.
6. Duplicate analysis value outside established acceptable limits.
7. Surrogate/internal standard recoveries outside established acceptable limits.
8. Data point suspect due to potential laboratory contamination (explain).
9. Coelutes with the compound cited. Result may represent a combination of both compounds.
10. Other (explain).

Note: This document is included as part of the Analytical Report for the above referenced and should be retained as a permanent record thereof.

Environmental Data
Management System
QA/QC IUB

ANALYTICAL REPORT

Selmer Company
Proj: Phase II
Field Investigation
Subm: March 7th Submittal

Submittal Number: 32169- 1
Location:
CCS Number 22334.00
CCS Manager: Scott Dennis

	TW-5	TW-2	TW-3	Detection Units Limit
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WWES Sample No:	80622	80623	80624	
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Project Specific Fraction Enclosed **Enclosed** **Enclosed**
USEPA Method 8021

Sampled by:	D.Johnson	D.Johnson	D.Johnson
Date Sampled:	03/07/94	03/07/94	03/07/94
Time Sampled:	15:20	15:30	15:55
Date Received:	03/08/94	03/08/94	03/08/94
Time Received:	07:40	07:40	07:40

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**Environmental Data
Management System**
QA/QC *100%*

ANALYTICAL REPORT

Selmer Company
Proj: Phase II
Field Investigation
Subm: March 7th Submittal

Submittal Number: 32169- 1
Location:
CCS Number 22334.00
CCS Manager: Scott Dennis

	TW-4	TW-1	Trip Blank	Detection Units
				Limit

WWES Sample No:	80625	80626	80627	
------------------------	--------------	--------------	--------------	--

Project Specific Fraction	Enclosed	Enclosed	Enclosed
USEPA Method 8021			

Sampled by:	D.Johnson	D.Johnson	D.Johnson
Date Sampled:	03/07/94	03/07/94	03/07/94
Time Sampled:	16:15	16:25	00:00
Date Received:	03/08/94	03/08/94	03/08/94
Time Received:	07:40	07:40	07:40

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**Environmental Data
Management System**
QA/QC *WB*

ANALYTICAL REPORT

Selmer Company
Proj: Phase II
Field Investigation
Subm: March 7th Submittal

Submittal Number: 32169- 1
Location:
CCS Number 22334.00
CCS Manager: Scott Dennis

Equipment	Trip Blank	Detection Units
Rinse Blk		Limit
SB-1 (4-6)		

WWES Sample No: 80628 80629

Project Specific Fraction Enclosed Enclosed
USEPA Method 8021

Sampled by:	D.Johnson
Date Sampled:	03/03/94
Time Sampled:	14:30
Date Received:	03/07/94
Time Received:	12:30

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**Environmental Data
Management System**
QA/QC

PROJECT SPECIFIC FRACTION
USEPA METHOD 8021

Selmer Company
Proj: Phase II
Field Investigation
Subm: March 7th Submittal
Sample: TW-5

Submittal Number 32169- 1
Date Sampled: 03/07/94 Time: 15:20
Date Received: 03/08/94 Time: 07:40
Analysis Date: 03/10/94
Sample No: 80622

Parameter	Result ug/l	Parameter	Result ug/l
Benzene	<1.0	1,1-Dichloroethylene	<1.0
Bromodichloromethane	<1.0	trans-1,2-Dichloroethene	<1.0
Bromoform	<1.0	cis-1,2-Dichloroethene	<1.0
Bromomethane	<1.0	1,2-Dichloropropane	<1.0
Carbon Tetrachloride	<1.0	cis-1,3-Dichloropropene	<1.0
Chlorobenzene	<1.0	trans-1,3-Dichloropropene	<1.0
Chloroethane	<1.0	Ethylbenzene	<1.0
2-Chloroethyl Vinyl Ether	<10	Methylene Chloride	<1.0
Chloroform	<1.0	1,1,2,2-Tetrachloroethane	<1.0
Chloromethane	<1.0	Tetrachloroethene	<1.0
Dibromochloromethane	<1.0	Toluene	<1.0
1,2-Dichlorobenzene	<1.0	1,1,1-Trichloroethane	<1.0
1,3-Dichlorobenzene	<1.0	1,1,2-Trichloroethane	<1.0
1,4-Dichlorobenzene	<1.0	Trichloroethylene	<1.0
Dichlorodifluoromethane	1.3	Trichlorofluoromethane	<1.0
1,1-Dichloroethane	<1.0	Vinyl Chloride	<1.0
1,2-Dichloroethane	<1.0	Xylene, Total	<3.0

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Environmental Data
Management System
QA/QC *WP*

PROJECT SPECIFIC FRACTION
USEPA METHOD 8021

Selmer Company
Proj: Phase II
Field Investigation
Subm: March 7th Submittal
Sample: TW-2

Submittal Number 32169- 1
Date Sampled: 03/07/94 Time: 15:30
Date Received: 03/08/94 Time: 07:40
Analysis Date: 03/11/94
Sample No: 80623

Parameter	Result ug/l	Parameter	Result ug/l
Benzene	<50	1,1-Dichloroethylene	<50
Bromodichloromethane	<50	trans-1,2-Dichloroethene	<50
Bromoform	<50	cis-1,2-Dichloroethene	1700
Bromomethane	<50	1,2-Dichloropropane	<50
Carbon Tetrachloride	<50	cis-1,3-Dichloropropene	<50
Chlorobenzene	<50	trans-1,3-Dichloropropene	<50
Chloroethane	<50	Ethylbenzene	<50
2-Chloroethyl Vinyl Ether	<500	Methylene Chloride	<50
Chloroform	<50	1,1,2,2-Tetrachloroethane	<50
Chloromethane	<50	Tetrachloroethene	<50
Dibromochloromethane	<50	Toluene	<50
1,2-Dichlorobenzene	<50	1,1,1-Trichloroethane	<50
1,3-Dichlorobenzene	<50	1,1,2-Trichloroethane	<50
1,4-Dichlorobenzene	<50	Trichloroethylene	2600
Dichlorodifluoromethane	<50	Trichlorofluoromethane	<50
1,1-Dichloroethane	<50	Vinyl Chloride	160
1,2-Dichloroethane	<50	Xylene, Total	<150

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Environmental Data
Management System
QA/QC WJS

**PROJECT SPECIFIC FRACTION
USEPA METHOD 8021**

Selmer Company
Proj: Phase II
Field Investigation
Subm: March 7th Submittal
Sample: TW-3

Submittal Number 32169- 1
Date Sampled: 03/07/94 Time: 15:55
Date Received: 03/08/94 Time: 07:40
Analysis Date: 03/11/94
Sample No: 80624

Parameter	Result ug/l	Parameter	Result ug/l
Benzene	<1.0	1,1-Dichloroethylene	<1.0
Bromodichloromethane	<1.0	trans-1,2-Dichloroethene	<1.0
Bromoform	<1.0	cis-1,2-Dichloroethene	<1.0
Bromomethane	<1.0	1,2-Dichloropropane	<1.0
Carbon Tetrachloride	<1.0	cis-1,3-Dichloropropene	<1.0
Chlorobenzene	<1.0	trans-1,3-Dichloropropene	<1.0
Chloroethane	<1.0	Ethylbenzene	<1.0
2-Chloroethyl Vinyl Ether	<10	Methylene Chloride	<1.0
Chloroform	<1.0	1,1,2,2-Tetrachloroethane	<1.0
Chloromethane	<1.0	Tetrachloroethene	2.3
Dibromochloromethane	<1.0	Toluene	<1.0
1,2-Dichlorobenzene	<1.0	1,1,1-Trichloroethane	<1.0
1,3-Dichlorobenzene	<1.0	1,1,2-Trichloroethane	<1.0
1,4-Dichlorobenzene	<1.0	Trichloroethylene	6.6
Dichlorodifluoromethane	<1.0	Trichlorofluoromethane	<1.0
1,1-Dichloroethane	<1.0	Vinyl Chloride	<1.0
1,2-Dichloroethane	<1.0	Xylene, Total	<3.0

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**PROJECT SPECIFIC FRACTION
USEPA METHOD 8021**

Selmer Company
Proj: Phase II
Field Investigation
Subm: March 7th Submittal
Sample: TW-4

Submittal Number 32169- 1
Date Sampled: 03/07/94 Time: 16:15
Date Received: 03/08/94 Time: 07:40
Analysis Date: 03/11/94
Sample No: 80625

Parameter	Result ug/l	Parameter	Result ug/l
Benzene	<50	1,1-Dichloroethylene	<50
Bromodichloromethane	<50	trans-1,2-Dichloroethene	<50
Bromoform	<50	cis-1,2-Dichloroethene	<50
Bromomethane	<50	1,2-Dichloropropane	<50
Carbon Tetrachloride	<50	cis-1,3-Dichloropropene	<50
Chlorobenzene	<50	trans-1,3-Dichloropropene	<50
Chloroethane	<50	Ethylbenzene	<50
2-Chloroethyl Vinyl Ether	<500	Methylene Chloride	<50
Chloroform	<50	1,1,2,2-Tetrachloroethane	<50
Chloromethane	<50	Tetrachloroethene	<50
Dibromochloromethane	<50	Toluene	<50
1,2-Dichlorobenzene	<50	1,1,1-Trichloroethane	<50
1,3-Dichlorobenzene	<50	1,1,2-Trichloroethane	<50
1,4-Dichlorobenzene	<50	Trichloroethylene	2900
Dichlorodifluoromethane	<50	Trichlorofluoromethane	<50
1,1-Dichloroethane	<50	Vinyl Chloride	<50
1,2-Dichloroethane	<50	Xylene, Total	<150

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**Environmental Data
Management System**
QA/QC UJB

**PROJECT SPECIFIC FRACTION
USEPA METHOD 8021**

Selmer Company
 Proj: Phase II
 Field Investigation
 Subm: March 7th Submittal
 Sample: TW-1

Submittal Number 32169- 1
 Date Sampled: 03/07/94 Time: 16:25
 Date Received: 03/08/94 Time: 07:40
 Analysis Date: 03/11/94
 Sample No: 80626

Parameter	Result ug/l	Parameter	Result ug/l
Benzene	<1.0	1,1-Dichloroethylene	<1.0
Bromodichloromethane	<1.0	trans-1,2-Dichloroethene	<1.0
Bromoform	<1.0	cis-1,2-Dichloroethene	<1.0
Bromomethane	<1.0	1,2-Dichloropropane	<1.0
Carbon Tetrachloride	<1.0	cis-1,3-Dichloropropene	<1.0
Chlorobenzene	<1.0	trans-1,3-Dichloropropene	<1.0
Chloroethane	<1.0	Ethylbenzene	<1.0
2-Chloroethyl Vinyl Ether	<10	Methylene Chloride	14
Chloroform	<1.0	1,1,2,2-Tetrachloroethane	<1.0
Chloromethane	<1.0	Tetrachloroethene	<1.0
Dibromochloromethane	<1.0	Toluene	<1.0
1,2-Dichlorobenzene	<1.0	1,1,1-Trichloroethane	<1.0
1,3-Dichlorobenzene	<1.0	1,1,2-Trichloroethane	<1.0
1,4-Dichlorobenzene	<1.0	Trichloroethylene	10
Dichlorodifluoromethane	<1.0	Trichlorofluoromethane	<1.0
1,1-Dichloroethane	<1.0	Vinyl Chloride	<1.0
1,2-Dichloroethane	<1.0	Xylene, Total	<3.0

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PROJECT SPECIFIC FRACTION
USEPA METHOD 8021

Selmer Company
Proj: Phase II
Field Investigation
Subm: March 7th Submittal
Sample: Trip Blank

Submittal Number 32169- 1
Date Sampled: 03/07/94 Time: 00:00
Date Received: 03/08/94 Time: 07:40
Analysis Date: 03/11/94
Sample No: 80627

Parameter	Result ug/l	Parameter	Result ug/l
Benzene	<1.0	1,1-Dichloroethylene	<1.0
Bromodichloromethane	<1.0	trans-1,2-Dichloroethene	<1.0
Bromoform	<1.0	cis-1,2-Dichloroethene	<1.0
Bromomethane	<1.0	1,2-Dichloropropane	<1.0
Carbon Tetrachloride	<1.0	cis-1,3-Dichloropropene	<1.0
Chlorobenzene	<1.0	trans-1,3-Dichloropropene	<1.0
Chloroethane	<1.0	Ethylbenzene	<1.0
2-Chloroethyl Vinyl Ether	<10	Methylene Chloride	<1.0
Chloroform	<1.0	1,1,2,2-Tetrachloroethane	<1.0
Chloromethane	<1.0	Tetrachloroethene	<1.0
Dibromochloromethane	<1.0	Toluene	<1.0
1,2-Dichlorobenzene	<1.0	1,1,1-Trichloroethane	<1.0
1,3-Dichlorobenzene	<1.0	1,1,2-Trichloroethane	<1.0
1,4-Dichlorobenzene	<1.0	Trichloroethylene	<1.0
Dichlorodifluoromethane	<1.0	Trichlorofluoromethane	<1.0
1,1-Dichloroethane	<1.0	Vinyl Chloride	<1.0
1,2-Dichloroethane	<1.0	Xylene, Total	<3.0

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**PROJECT SPECIFIC FRACTION
USEPA METHOD 8021**

Selmer Company

Proj: Phase II
Field Investigation
Subm: March 7th Submittal
Sample: Equipment
Rinse Blk
SB-1 (4-6)

Submittal Number 32169- 1
Date Sampled: 03/03/94 Time: 14:30
Date Received: 03/07/94 Time: 12:30
Analysis Date: 03/10/94
Sample No: 80628

Parameter	Result ug/l	Parameter	Result ug/l
Benzene	<1.0	1,1-Dichloroethylene	<1.0
Bromodichloromethane	<1.0	trans-1,2-Dichloroethene	<1.0
Bromoform	<1.0	cis-1,2-Dichloroethene	<1.0
Bromomethane	<1.0	1,2-Dichloropropane	<1.0
Carbon Tetrachloride	<1.0	cis-1,3-Dichloropropene	<1.0
Chlorobenzene	<1.0	trans-1,3-Dichloropropene	<1.0
Chloroethane	<1.0	Ethylbenzene	<1.0
2-Chloroethyl Vinyl Ether	<10	Methylene Chloride	1.3
Chloroform	<1.0	1,1,2,2-Tetrachloroethane	<1.0
Chloromethane	<1.0	Tetrachloroethene	<1.0
Dibromochloromethane	<1.0	Toluene	<1.0
1,2-Dichlorobenzene	<1.0	1,1,1-Trichloroethane	<1.0
1,3-Dichlorobenzene	<1.0	1,1,2-Trichloroethane	<1.0
1,4-Dichlorobenzene	<1.0	Trichloroethylene	<1.0
Dichlorodifluoromethane	<1.0	Trichlorofluoromethane	<1.0
1,1-Dichloroethane	<1.0	Vinyl Chloride	<1.0
1,2-Dichloroethane	<1.0	Xylene, Total	<3.0

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Environmental Data
Management System
QA/QC WJD

**PROJECT SPECIFIC FRACTION
USEPA METHOD 8021**

Selmer Company
Proj: Phase II
Field Investigation
Subm: March 7th Submittal
Sample: Trip Blank

Submittal Number 32169- 1
Date Sampled: 03/02/94 Time: 00:00
Date Received: 03/07/94 Time: 12:30
Analysis Date: 03/10/94
Sample No: 80629

Parameter	Result ug/l	Parameter	Result ug/l
Benzene	<1.0	1,1-Dichloroethylene	<1.0
Bromodichloromethane	<1.0	trans-1,2-Dichloroethene	<1.0
Bromoform	<1.0	cis-1,2-Dichloroethene	<1.0
Bromomethane	<1.0	1,2-Dichloropropane	<1.0
Carbon Tetrachloride	<1.0	cis-1,3-Dichloropropene	<1.0
Chlorobenzene	<1.0	trans-1,3-Dichloropropene	<1.0
Chloroethane	<1.0	Ethylbenzene	<1.0
2-Chloroethyl Vinyl Ether	<10	Methylene Chloride	<1.0
Chloroform	<1.0	1,1,2,2-Tetrachloroethane	<1.0
Chloromethane	<1.0	Tetrachloroethene	<1.0
Dibromochloromethane	<1.0	Toluene	<1.0
1,2-Dichlorobenzene	<1.0	1,1,1-Trichloroethane	<1.0
1,3-Dichlorobenzene	<1.0	1,1,2-Trichloroethane	<1.0
1,4-Dichlorobenzene	<1.0	Trichloroethylene	<1.0
Dichlorodifluoromethane	<1.0	Trichlorofluoromethane	<1.0
1,1-Dichloroethane	<1.0	Vinyl Chloride	<1.0
1,2-Dichloroethane	<1.0	Xylene, Total	<3.0

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Environmental Data
Management System
QA/QC WJS

ANALYTICAL REPORT

Selmer Company
Proj: Phase II
Field Investigation
Subm: March 7th Submittal

Submittal Number: 32169- 1
Location:
CCS Number 22334.00
CCS Manager: Scott Dennis

	SB-1 (2-4')	SB-1 (4-6')	SB-2 (4-6')	Detection Units Limit
WWES Sample No:	80611	80612	80613	
Project Specific Fraction	Enclosed	Enclosed		
USEPA Method 8021				
Percent Solids	85	74	88	0.1 %
Project Specific Fraction			Enclosed	
USEPA Method 8240				
Sampled by:	D.Johnson	D.Johnson	D.Johnson	
Date Sampled:	03/03/94	03/03/94	03/02/94	
Time Sampled:	14:30	14:40	16:50	
Date Received:	03/07/94	03/07/94	03/07/94	
Time Received:	12:30	12:30	12:30	

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**Environmental Data
Management System**
QA/QC WIP

ANALYTICAL REPORT

Selmer Company
Proj: Phase II
Field Investigation
Subm: March 7th Submittal

Submittal Number: 32169- 1
Location:
CCS Number 22334.00
CCS Manager: Scott Dennis

SB-2 (6-8')	SB-2 (8-10')	SB-3 (4-6')	Detection Units Limit
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WWES Sample No: 80614 80615 80616

Project Specific Fraction USEPA Method 8021	Enclosed	Enclosed	Enclosed
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Percent Solids	88	90	89	0.1	%
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Sampled by:	D.Johnson	D.Johnson	D.Johnson
Date Sampled:	03/02/94	03/02/94	03/03/94
Time Sampled:	16:55	17:05	09:35
Date Received:	03/07/94	03/07/94	03/07/94
Time Received:	12:30	12:30	12:30

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**Environmental Data
Management System**
QA/QC WJS

ANALYTICAL REPORT

Selmer Company
Proj: Phase II
Field Investigation
Subm: March 7th Submittal

Submittal Number: 32169- 1
Location:
CCS Number 22334.00
CCS Manager: Scott Dennis

	SB-3 (6-8')	SB-3 (8-10')	SB-5 (4-6')	Detection Units Limit
WWES Sample No:	80617	80618	80619	
Project Specific Fraction	Enclosed	Enclosed	Enclosed	
USEPA Method 8021				
Percent Solids	87	92	96	0.1 %
Sampled by:	D.Johnson	D.Johnson	D.Johnson	
Date Sampled:	03/03/94	03/03/94	03/02/94	
Time Sampled:	09:40	09:50	13:50	
Date Received:	03/07/94	03/07/94	03/07/94	
Time Received:	12:30	12:30	12:30	

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**Environmental Data
Management System**
QA/QC 013

ANALYTICAL REPORT

Selmer Company
Proj: Phase II
Field Investigation
Subm: March 7th Submittal

Submittal Number: 32169- 1
Location:
CCS Number 22334.00
CCS Manager: Scott Dennis

SB-5 (8-10')	SB-2 (6-8') Duplicate	Detection Units Limit
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WWES Sample No: 80620 80621

Project Specific Fraction	Enclosed	Enclosed
USEPA Method 8021		
Percent Solids	94	89

Sampled by:	D.Johnson	D.Johnson
Date Sampled:	03/02/94	03/02/94
Time Sampled:	14:05	16:55
Date Received:	03/07/94	03/07/94
Time Received:	12:30	12:30

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Environmental Data
Management System
QA/QC 11/12

PROJECT SPECIFIC FRACTION
USEPA METHOD 8021

Selmer Company
Proj: Phase II
Field Investigation
Subm: March 7th Submittal
Sample: SB-1
(2-4')

Submittal Number 32169- 1
Date Sampled: 03/03/94 Time: 14:30
Date Received: 03/07/94 Time: 12:30
Analysis Date: 03/15/94
Sample No: 80611

Parameter	Result mg/kg	Parameter	Result mg/kg
Benzene	<0.010	1,1-Dichloroethylene	<0.010
Bromodichloromethane	<0.010	trans-1,2-Dichloroethene	<0.010
Bromoform	<0.010	cis-1,2-Dichloroethene	<0.010
Bromomethane	<0.010	1,2-Dichloropropane	<0.010
Carbon Tetrachloride	<0.010	cis-1,3-Dichloropropene	<0.010
Chlorobenzene	<0.010	trans-1,3-Dichloropropene	<0.010
Chloroethane	<0.010	Ethylbenzene	<0.010
2-Chloroethyl Vinyl Ether	<0.10	Methylene Chloride	<0.010
Chloroform	<0.010	1,1,2,2-Tetrachloroethane	<0.010
Chloromethane	<0.010	Tetrachloroethylene	<0.010
Dibromochloromethane	<0.010	Toluene	<0.010
1,2-Dichlorobenzene	<0.010	1,1,1-Trichloroethane	<0.010
1,3-Dichlorobenzene	<0.010	1,1,2-Trichloroethane	<0.010
1,4-Dichlorobenzene	<0.010	Trichloroethylene	<0.010
Dichlorodifluoromethane	<0.010	Trichlorofluoromethane	<0.010
1,1-Dichloroethane	<0.010	Vinyl Chloride	<0.010
1,2-Dichloroethane	<0.010	Xylene, Total	<0.030

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PROJECT SPECIFIC FRACTION
USEPA METHOD 8021**Selmer Company**Proj: Phase II
Field Investigation
Subm: March 7th Submittal
Sample: SB-1
(4-6')Submittal Number 32169- 1
Date Sampled: 03/03/94 Time: 14:40
Date Received: 03/07/94 Time: 12:30
Analysis Date: 03/15/94
Sample No: 80612

Parameter	Result mg/kg	Parameter	Result mg/kg
Benzene	<0.010	1,1-Dichloroethylene	<0.010
Bromodichloromethane	<0.010	trans-1,2-Dichloroethene	<0.010
Bromoform	<0.010	cis-1,2-Dichloroethene	<0.010
Bromomethane	<0.010	1,2-Dichloropropane	<0.010
Carbon Tetrachloride	<0.010	cis-1,3-Dichloropropene	<0.010
Chlorobenzene	<0.010	trans-1,3-Dichloropropene	<0.010
Chloroethane	<0.010	Ethylbenzene	<0.010
2-Chloroethyl Vinyl Ether	<0.10	Methylene Chloride	<0.010
Chloroform	<0.010	1,1,2,2-Tetrachloroethane	<0.010
Chloromethane	<0.010	Tetrachloroethene	<0.010
Dibromochloromethane	<0.010	Toluene	<0.010
1,2-Dichlorobenzene	<0.010	1,1,1-Trichloroethane	<0.010
1,3-Dichlorobenzene	<0.010	1,1,2-Trichloroethane	<0.010
1,4-Dichlorobenzene	<0.010	Trichloroethylene	<0.010
Dichlorodifluoromethane	<0.010	Trichlorofluoromethane	<0.010
1,1-Dichloroethane	<0.010	Vinyl Chloride	<0.010
1,2-Dichloroethane	<0.010	Xylene, Total	<0.030

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PROJECT SPECIFIC FRACTION
USEPA METHOD 8240**Selmer Company**

Proj: Phase II
Field Investigation
Subm: March 7th Submittal
Sample: SB-2
(4-6')

Submittal Number 32169- 1
Date Sampled: 03/02/94 Time: 16:50
Date Received: 03/07/94 Time: 12:30
Analysis Date: 03/16/94
Sample No: 80613

Parameter	Result mg/kg	Parameter	Result mg/kg
Benzene	1.1	1,1-Dichloroethylene	<0.05
Bromodichloromethane	<0.05	trans-1,2-Dichloroethene	<0.05
Bromoform	<0.05	1,2-Dichloropropane	<0.05
Bromomethane	<0.05	cis-1,3-Dichloropropene	<0.05
Carbon Tetrachloride	<0.05	trans-1,3-Dichloropropene	<0.05
Chlorobenzene	<0.05	Ethylbenzene	<0.05
Chloroethane	<0.05	Methylene Chloride	<0.05
2-Chloroethyl Vinyl Ether	<0.5	1,1,2,2-Tetrachloroethane	<0.05
Chloroform	<0.05	Tetrachloroethene	<0.05
Chloromethane	<0.05	Toluene	<0.05
Dibromochloromethane	<0.05	1,1,1-Trichloroethane	<0.05
1,2-Dichlorobenzene	<0.05	1,1,2-Trichloroethane	<0.05
1,3-Dichlorobenzene	<0.05	Trichloroethylene	<0.05
1,4-Dichlorobenzene	<0.05	Trichlorofluoromethane	<0.05
Dichlorodifluoromethane	<0.05	Vinyl Chloride	<0.05
1,1-Dichloroethane	<0.05	Xylene, Total	<0.15
1,2-Dichloroethane	<0.05	cis-1,2-Dichloroethene	<0.05

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PROJECT SPECIFIC FRACTION
USEPA METHOD 8021**Selmer Company**

Proj: Phase II

Field Investigation

Subm: March 7th Submittal

Sample: SB-2
(6-8')Submittal Number 32169- 1
Date Sampled: 03/02/94 Time: 16:55
Date Received: 03/07/94 Time: 12:30
Analysis Date: 03/16/94
Sample No: 80614

Parameter	Result mg/kg	Parameter	Result mg/kg
Benzene	<0.010	1,1-Dichloroethylene	<0.010
Bromodichloromethane	<0.010	trans-1,2-Dichloroethene	<0.010
Bromoform	<0.010	cis-1,2-Dichloroethene	0.077
Bromomethane	<0.010	1,2-Dichloropropane	<0.010
Carbon Tetrachloride	<0.010	cis-1,3-Dichloropropene	<0.010
Chlorobenzene	<0.010	trans-1,3-Dichloropropene	<0.010
Chloroethane	<0.010	Ethylbenzene	<0.010
2-Chloroethyl Vinyl Ether	<0.10	Methylene Chloride	<0.010
Chloroform	<0.010	1,1,2,2-Tetrachloroethane	<0.010
Chloromethane	<0.010	Tetrachloroethene	<0.010
Dibromochloromethane	<0.010	Toluene	<0.010
1,2-Dichlorobenzene	<0.010	1,1,1-Trichloroethane	<0.010
1,3-Dichlorobenzene	<0.010	1,1,2-Trichloroethane	<0.010
1,4-Dichlorobenzene	<0.010	Trichloroethylene	0.88
Dichlorodifluoromethane	<0.010	Trichlorofluoromethane	<0.010
1,1-Dichloroethane	<0.010	Vinyl Chloride	<0.010
1,2-Dichloroethane	<0.010	Xylene, Total	<0.030

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Environmental Data
Management System
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**PROJECT SPECIFIC FRACTION
USEPA METHOD 8021**

Selmer Company

Proj: Phase II
Field Investigation
Subm: March 7th Submittal
Sample: SB-2
(8-10')

Submittal Number 32169- 1
Date Sampled: 03/02/94 Time: 17:05
Date Received: 03/07/94 Time: 12:30
Analysis Date: 03/16/94
Sample No: 80615

Parameter	Result mg/kg	Parameter	Result mg/kg
Benzene	<0.010	1,1-Dichloroethylene	<0.010
Bromodichloromethane	<0.010	trans-1,2-Dichloroethene	<0.010
Bromoform	<0.010	cis-1,2-Dichloroethene	0.078
Bromomethane	<0.010	1,2-Dichloropropane	<0.010
Carbon Tetrachloride	<0.010	cis-1,3-Dichloropropene	<0.010
Chlorobenzene	<0.010	trans-1,3-Dichloropropene	0.019
Chloroethane	<0.010	Ethylbenzene	<0.010
2-Chloroethyl Vinyl Ether	<0.10	Methylene Chloride	<0.010
Chloroform	<0.010	1,1,2,2-Tetrachloroethane	<0.010
Chloromethane	<0.010	Tetrachloroethylene	<0.010
Dibromochloromethane	<0.010	Toluene	0.054
1,2-Dichlorobenzene	<0.010	1,1,1-Trichloroethane	<0.010
1,3-Dichlorobenzene	<0.010	1,1,2-Trichloroethane	<0.010
1,4-Dichlorobenzene	<0.010	Trichloroethylene	0.51
Dichlorodifluoromethane	<0.010	Trichlorofluoromethane	<0.010
1,1-Dichloroethane	<0.010	Vinyl Chloride	<0.010
1,2-Dichloroethane	<0.010	Xylene, Total	<0.030

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**PROJECT SPECIFIC FRACTION
USEPA METHOD 8021**

Selmer Company
 Proj: Phase II
 Field Investigation
 Subm: March 7th Submittal
 Sample: SB-3
 (4-6')

Submittal Number 32169- 1
 Date Sampled: 03/03/94 Time: 09:35
 Date Received: 03/07/94 Time: 12:30
 Analysis Date: 03/16/94
 Sample No: 80616

Parameter	Result mg/kg	Parameter	Result mg/kg
Benzene	<0.010	1,1-Dichloroethylene	<0.010
Bromodichloromethane	<0.010	trans-1,2-Dichloroethene	<0.010
Bromoform	<0.010	cis-1,2-Dichloroethene	<0.010
Bromomethane	<0.010	1,2-Dichloropropane	<0.010
Carbon Tetrachloride	<0.010	cis-1,3-Dichloropropene	<0.010
Chlorobenzene	<0.010	trans-1,3-Dichloropropene	<0.010
Chloroethane	<0.010	Ethylbenzene	<0.010
2-Chloroethyl Vinyl Ether	<0.10	Methylene Chloride	<0.010
Chloroform	<0.010	1,1,2,2-Tetrachloroethane	<0.010
Chloromethane	<0.010	Tetrachloroethene	<0.010
Dibromochloromethane	<0.010	Toluene	0.010
1,2-Dichlorobenzene	<0.010	1,1,1-Trichloroethane	<0.010
1,3-Dichlorobenzene	<0.010	1,1,2-Trichloroethane	<0.010
1,4-Dichlorobenzene	<0.010	Trichloroethylene	0.092
Dichlorodifluoromethane	<0.010	Trichlorofluoromethane	<0.010
1,1-Dichloroethane	<0.010	Vinyl Chloride	<0.010
1,2-Dichloroethane	<0.010	Xylene, Total	<0.030

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**PROJECT SPECIFIC FRACTION
USEPA METHOD 8021**

Selmer Company

Proj: Phase II
Field Investigation
Subm: March 7th Submittal
Sample: SB-3
(6-8')

Submittal Number 32169- 1
Date Sampled: 03/03/94 Time: 09:40
Date Received: 03/07/94 Time: 12:30
Analysis Date: 03/16/94
Sample No: 80617

Parameter	Result mg/kg	Parameter	Result mg/kg
Benzene	<0.010	1,1-Dichloroethylene	<0.010
Bromodichloromethane	<0.010	trans-1,2-Dichloroethene	<0.010
Bromoform	<0.010	cis-1,2-Dichloroethene	<0.010
Bromomethane	<0.010	1,2-Dichloropropane	<0.010
Carbon Tetrachloride	<0.010	cis-1,3-Dichloropropene	<0.010
Chlorobenzene	<0.010	trans-1,3-Dichloropropene	<0.010
Chloroethane	<0.010	Ethylbenzene	<0.010
2-Chloroethyl Vinyl Ether	<0.10	Methylene Chloride	<0.010
Chloroform	<0.010	1,1,2,2-Tetrachloroethane	<0.010
Chloromethane	<0.010	Tetrachloroethene	<0.010
Dibromochloromethane	<0.010	Toluene	<0.010
1,2-Dichlorobenzene	<0.010	1,1,1-Trichloroethane	<0.010
1,3-Dichlorobenzene	<0.010	1,1,2-Trichloroethane	<0.010
1,4-Dichlorobenzene	<0.010	Trichloroethylene	0.82
Dichlorodifluoromethane	<0.010	Trichlorofluoromethane	<0.010
1,1-Dichloroethane	<0.010	Vinyl Chloride	<0.010
1,2-Dichloroethane	<0.010	Xylene, Total	<0.030

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Environmental Data
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PROJECT SPECIFIC FRACTION
USEPA METHOD 8021

Selmer Company
Proj: Phase II
Field Investigation
Subm: March 7th Submittal
Sample: SB-3
(8-10')

Submittal Number 32169- 1
Date Sampled: 03/03/94 Time: 09:50
Date Received: 03/07/94 Time: 12:30
Analysis Date: 03/16/94
Sample No: 80618

Parameter	Result mg/kg	Parameter	Result mg/kg
Benzene	<0.010	1,1-Dichloroethylene	<0.010
Bromodichloromethane	<0.010	trans-1,2-Dichloroethene	<0.010
Bromoform	<0.010	cis-1,2-Dichloroethene	<0.010
Bromomethane	<0.010	1,2-Dichloropropane	<0.010
Carbon Tetrachloride	<0.010	cis-1,3-Dichloropropene	<0.010
Chlorobenzene	<0.010	trans-1,3-Dichloropropene	<0.010
Chloroethane	<0.010	Ethylbenzene	<0.010
2-Chloroethyl Vinyl Ether	<0.10	Methylene Chloride	<0.010
Chloroform	<0.010	1,1,2,2-Tetrachloroethane	<0.010
Chloromethane	<0.010	Tetrachloroethene	<0.010
Dibromochloromethane	<0.010	Toluene	0.013
1,2-Dichlorobenzene	<0.010	1,1,1-Trichloroethane	<0.010
1,3-Dichlorobenzene	<0.010	1,1,2-Trichloroethane	<0.010
1,4-Dichlorobenzene	<0.010	Trichloroethylene	0.016
Dichlorodifluoromethane	<0.010	Trichlorofluoromethane	<0.010
1,1-Dichloroethane	<0.010	Vinyl Chloride	<0.010
1,2-Dichloroethane	<0.010	Xylene, Total	<0.030

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Environmental Data
Management System
QA/QC WDB

PROJECT SPECIFIC FRACTION
USEPA METHOD 8021

Selmer Company
Proj: Phase II
Field Investigation
Subm: March 7th Submittal
Sample: SB-5
(4-6')

Submittal Number 32169- 1
Date Sampled: 03/02/94 Time: 13:50
Date Received: 03/07/94 Time: 12:30
Analysis Date: 03/16/94
Sample No: 80619

Parameter	Result mg/kg	Parameter	Result mg/kg
Benzene	<0.010	1,1-Dichloroethylene	<0.010
Bromodichloromethane	<0.010	trans-1,2-Dichloroethene	<0.010
Bromoform	<0.010	cis-1,2-Dichloroethene	<0.010
Bromomethane	<0.010	1,2-Dichloroproppane	<0.010
Carbon Tetrachloride	<0.010	cis-1,3-Dichloropropene	<0.010
Chlorobenzene	<0.010	trans-1,3-Dichloropropene	<0.010
Chloroethane	<0.010	Ethylbenzene	<0.010
2-Chloroethyl Vinyl Ether	<0.10	Methylene Chloride	<0.010
Chloroform	<0.010	1,1,2,2-Tetrachloroethane	<0.010
Chloromethane	<0.010	Tetrachloroethene	<0.010
Dibromochloromethane	<0.010	Toluene	<0.010
1,2-Dichlorobenzene	<0.010	1,1,1-Trichloroethane	<0.010
1,3-Dichlorobenzene	<0.010	1,1,2-Trichloroethane	<0.010
1,4-Dichlorobenzene	<0.010	Trichloroethylene	<0.010
Dichlorodifluoromethane	<0.010	Trichlorofluoromethane	<0.010
1,1-Dichloroethane	<0.010	Vinyl Chloride	<0.010
1,2-Dichloroethane	<0.010	Xylene, Total	<0.030

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Environmental Data
Management System
QA/QC WB

PROJECT SPECIFIC FRACTION
USEPA METHOD 8021

Selmer Company
 Proj: Phase II
 Field Investigation
 Subm: March 7th Submittal
 Sample: SB-5
 (8-10')

Submittal Number 32169- 1
 Date Sampled: 03/02/94 Time: 14:05
 Date Received: 03/07/94 Time: 12:30
 Analysis Date: 03/16/94
 Sample No: 80620

Parameter	Result mg/kg	Parameter	Result mg/kg
Benzene	<0.010	1,1-Dichloroethylene	<0.010
Bromodichloromethane	<0.010	trans-1,2-Dichloroethene	<0.010
Bromoform	<0.010	cis-1,2-Dichloroethene	<0.010
Bromomethane	<0.010	1,2-Dichloropropane	<0.010
Carbon Tetrachloride	<0.010	cis-1,3-Dichloropropene	<0.010
Chlorobenzene	<0.010	trans-1,3-Dichloropropene	<0.010
Chloroethane	<0.010	Ethylbenzene	<0.010
2-Chloroethyl Vinyl Ether	<0.10	Methylene Chloride	<0.010
Chloroform	<0.010	1,1,2,2-Tetrachloroethane	<0.010
Chloromethane	<0.010	Tetrachloroethene	<0.010
Dibromochloromethane	<0.010	Toluene	<0.010
1,2-Dichlorobenzene	<0.010	1,1,1-Trichloroethane	<0.010
1,3-Dichlorobenzene	<0.010	1,1,2-Trichloroethane	<0.010
1,4-Dichlorobenzene	<0.010	Trichloroethylene	<0.010
Dichlorodifluoromethane	<0.010	Trichlorofluoromethane	<0.010
1,1-Dichloroethane	<0.010	Vinyl Chloride	<0.010
1,2-Dichloroethane	<0.010	Xylene, Total	<0.030

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**PROJECT SPECIFIC FRACTION
USEPA METHOD 8021**

Selmer Company
 Proj: Phase II
 Field Investigation
 Subm: March 7th Submittal
 Sample: SB-2
 (6-8')
 Duplicate

Submittal Number 32169- 1
 Date Sampled: 03/02/94 Time: 16:55
 Date Received: 03/07/94 Time: 12:30
 Analysis Date: 03/16/94
 Sample No: 80621

Parameter	Result mg/kg	Parameter	Result mg/kg
Benzene	<0.010	1,1-Dichloroethylene	<0.010
Bromodichloromethane	<0.010	trans-1,2-Dichloroethene	<0.010
Bromoform	<0.010	cis-1,2-Dichloroethene	0.012
Bromomethane	<0.010	1,2-Dichloropropane	<0.010
Carbon Tetrachloride	<0.010	cis-1,3-Dichloropropene	<0.010
Chlorobenzene	<0.010	trans-1,3-Dichloropropene	<0.010
Chloroethane	<0.010	Ethylbenzene	<0.010
2-Chloroethyl Vinyl Ether	<0.10	Methylene Chloride	<0.010
Chloroform	<0.010	1,1,2,2-Tetrachloroethane	<0.010
Chloromethane	<0.010	Tetrachloroethene	<0.010
Dibromochloromethane	<0.010	Toluene	<0.010
1,2-Dichlorobenzene	<0.010	1,1,1-Trichloroethane	<0.010
1,3-Dichlorobenzene	<0.010	1,1,2-Trichloroethane	<0.010
1,4-Dichlorobenzene	<0.010	Trichloroethylene	0.17
Dichlorodifluoromethane	<0.010	Trichlorofluoromethane	<0.010
1,1-Dichloroethane	<0.010	Vinyl Chloride	<0.010
1,2-Dichloroethane	<0.010	Xylene, Total	<0.030

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QUALITY CONTROL REPORT

Parameter: **Percent Solids**

Method: Residue-Gravimetric, Dried @ 103-105*C USEPA-160.3 SOIL

Method Preparation Blank

Test Date	Analyst	Blank Conc
03/17/94	Rachel M. Shirey	<0.1
03/21/94	Rachel M. Shirey	<0.1

Duplicate Percent Difference $>10 \times \text{ODL Mean \%} = 0.00$ Limits: 0.00- 25.00
 $\leq 10 \times \text{ODL Mean \%} = 0.88$ Limits: 0.00- 4.51

Sample Number	Test Date	Analyst	Sample Conc	Duplicate Conc	Relative % Difference
80612	03/21/94	Rachel M. Shirey	74	73	1.36 %

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QUALITY CONTROL REPORT

METHOD PREPARATION BLANK

Fraction: Volatile Organics USEPA Method 8240
Method: Volatiles Purge & Trap-GC/MS USEPA-8240 WTR
Analyst: Phuong K. Tran Test Date: 03/17/94
Units: ug/l

Parameter	Blank Concentration
Acetone	<50
Benzene	<1.0
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Methyl Ethyl Ketone	<50
Carbon Disulfide	<50
Carbon Tetrachloride	<1.0
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethyl Vinyl Ether	<10
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<1.0
1,1-Dichloroethylene	<1.0
1,2-Dichloroethene (total)	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Ethylbenzene	<1.0
2-Hexanone	<50
4-Methyl-2-Pentanone	<50
Methylene Chloride	<1.0
Styrene	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	<1.0
1,1,1-Trichloroethane	<1.0
1,1,2-Trichloroethane	<1.0
Trichloroethene	<1.0
Toluene	<1.0
Vinyl Acetate	<1.0
Vinyl Chloride	<1.0
Xylene, Total	<3.0

QUALITY CONTROL REPORT

METHOD PREPARATION BLANK

Fraction: Volatile Organics USEPA Method 8240
Method: Volatiles Purge & Trap-GC/MS USEPA-8240 WTR
Analyst: Janet M. Kudirka Test Date: 03/16/94
Units: ug/l

Parameter	Blank Concentration
Acetone	<50
Benzene	<1.0
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Methyl Ethyl Ketone	<50
Carbon Disulfide	<50
Carbon Tetrachloride	<1.0
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethyl Vinyl Ether	<10
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<1.0
1,1-Dichloroethylene	<1.0
1,2-Dichloroethene (total)	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Ethylbenzene	<1.0
2-Hexanone	<50
4-Methyl-2-Pentanone	<50
Methylene Chloride	<1.0
Styrene	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	<1.0
1,1,1-Trichloroethane	<1.0
1,1,2-Trichloroethane	<1.0
Trichloroethene	<1.0
Toluene	<1.0
Vinyl Acetate	<1.0
Vinyl Chloride	<1.0
Xylene, Total	<3.0

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QUALITY CONTROL REPORT

METHOD PREPARATION BLANK

Fraction: Volatile Organics USEPA-601 Scan
Method: Halocarbons Purge & Trap-GC USEPA-601 WTR
Analyst: Gerald L. Holycross Test Date: 03/14/94
Units: ug/l

Parameter	Blank Concentration
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon Tetrachloride	<1.0
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethyl Vinyl Ether	<10
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<1.0
Dichlorodifluoromethane	<1.0
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<1.0
1,1-Dichloroethylene	<1.0
trans-1,2-Dichloroethene	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Methylene Chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	<1.0
1,1,1-Trichloroethane	<1.0
1,1,2-Trichloroethane	<1.0
Trichloroethylene	<1.0
Trichlorofluoromethane	<1.0
Vinyl Chloride	<1.0

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QUALITY CONTROL REPORT

MATRIX SPIKE RECOVERY

Fraction: Volatile Organic Fraction USEPA Method-8021
Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 SOIL
Analyst: Steve R. Repp Test Date: 03/16/94
Sample No: 80611
Units: mg/kg

Parameter	Sample Conc	Spike Quantity	Sample +Spike	Spike % Rec	Control Limits
Benzene	<0.010	0.024	0.021	87.50	51.87-140.73
Chlorobenzene	<0.010	0.024	0.019	79.17	69.73-128.35
1,1-Dichloroethylene	<0.010	0.024	0.019	79.17	27.98-159.32
Trichloroethylene	<0.010	0.024	0.024	100.00	65.96-138.26
Toluene	<0.010	0.024	0.034	141.67	51.47-143.57

QUALITY CONTROL REPORT**MATRIX SPIKE RECOVERY**

Fraction: Volatile Organic Fraction USEPA Method-8021
Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 SOIL
Analyst: Steve R. Repp Test Date: 03/16/94
Sample No: 80611
Units: mg/kg.

Parameter	Sample Conc	Spike Quantity	Sample +Spike	Spike % Rec	Control Limits
Benzene	<0.010	0.024	0.018	75.00	51.87-140.73
Chlorobenzene	<0.010	0.024	0.017	70.83	69.73-128.35
1,1-Dichloroethylene	<0.010	0.024	0.017	70.83	27.98-159.32
Trichloroethylene	<0.010	0.024	0.019	79.17	65.96-138.26
Toluene	<0.010	0.024	0.044	183.33	51.47-143.57

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QUALITY CONTROL REPORT

MATRIX SPIKE DUPLICATE

Fraction: Volatile Organic Fraction USEPA Method-8021
Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 SOIL
Analyst: Steve R. Repp Test Date: 03/16/94
Sample No: 80611
Units: mg/kg

Parameter	Sample+Spike Conc #1	Sample+Spike Conc #2	Relative % Diff.	Control Limits
Benzene	0.021	0.018	15.38	0.00- 20.33
Chlorobenzene	0.019	0.017	11.11	0.00- 25.25
1,1-Dichloroethylene	0.019	0.017	11.11	0.00- 28.37
Trichloroethylene	0.024	0.019	23.26	0.00- 25.97
Toluene	0.034	0.044	25.64	0.00- 21.46

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QUALITY CONTROL REPORT

LABORATORY CONTROL SAMPLE

Fraction: Volatile Organic Fraction USEPA Method-8021
Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
Analyst: Gerald L. Holycross Test Date: 03/10/94
Units: ug/l

Parameter	Blank Conc	Spike Quantity	Spike Result	Spike % Rec	Control Limits
Benzene	<1.0	20.0	20.1	100.50	76.54-120.28
Chlorobenzene	<1.0	20.0	20.0	100.00	78.32-119.84
1,1-Dichloroethylene	<1.0	20.0	18.5	92.50	65.44-134.32
Trichloroethylene	<1.0	20.0	19.5	97.50	82.59-122.49
Toluene	<1.0	20.0	19.0	95.00	76.91-121.37

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QUALITY CONTROL REPORT

LABORATORY CONTROL SAMPLE

Fraction: Volatile Organic Fraction USEPA Method-8021
Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
Analyst: Gerald L. Holycross Test Date: 03/15/94
Units: ug/l

Parameter	Blank Conc	Spike Quantity	Spike Result	Spike % Rec	Control Limits
Benzene	<1.0	20.0	19.9	99.50	76.54-120.28
Chlorobenzene	<1.0	20.0	22.4	112.00	78.32-119.84
1,1-Dichloroethylene	<1.0	20.0	22.3	111.50	65.44-134.32
Trichloroethylene	<1.0	20.0	22.0	110.00	82.59-122.49
Toluene	<1.0	20.0	19.6	98.00	76.91-121.37

QUALITY CONTROL REPORT

METHOD PREPARATION BLANK

Fraction: Volatile Organic Fraction USEPA Method-8021
Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
Analyst: Gerald L. Holycross Test Date: 03/10/94
Units: ug/l

Parameter	Blank Concentration
Benzene	<1.0
Chlorobenzene	<1.0
1,1-Dichloroethylene	<1.0
Trichloroethylene	<1.0
Toluene	<1.0

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QUALITY CONTROL REPORT

METHOD PREPARATION BLANK

Fraction: Volatile Organics USEPA Method 8021
 Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
 Analyst: Jim A. DeVera Test Date: 03/11/94
 Units: ug/l

Parameter	Blank Concentration
Benzene	<1.0
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon Tetrachloride	<1.0
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethyl Vinyl Ether	<10
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<1.0
Dichlorodifluoromethane	<1.0
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<1.0
1,1-Dichloroethylene	<1.0
cis-1,2-Dichloroethene	<1.0
trans-1,2-Dichloroethene	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Ethylbenzene	<1.0
Methylene Chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	<1.0
Toluene	<1.0
1,1,1-Trichloroethane	<1.0
1,1,2-Trichloroethane	<1.0
Trichloroethylene	<1.0
Trichlorofluoromethane	<1.0
Vinyl Chloride	<1.0
Xylene, Total	<3.0

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QUALITY CONTROL REPORT

METHOD PREPARATION BLANK

Fraction: Volatile Organics USEPA Method 8021
Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
Analyst: Gerald L. Holycross Test Date: 03/10/94
Units: ug/l

Parameter **Blank Concentration**

Parameter	Blank Concentration
Benzene	<1.0
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon Tetrachloride	<1.0
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethyl Vinyl Ether	<10
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<1.0
Dichlorodifluoromethane	<1.0
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<1.0
1,1-Dichloroethylene	<1.0
cis-1,2-Dichloroethene	<1.0
trans-1,2-Dichloroethene	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Ethylbenzene	<1.0
Methylene Chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	<1.0
Toluene	<1.0
1,1,1-Trichloroethane	<1.0
1,1,2-Trichloroethane	<1.0
Trichloroethylene	<1.0
Trichlorofluoromethane	<1.0
Vinyl Chloride	<1.0
Xylene, Total	<3.0

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QUALITY CONTROL REPORT

METHOD PREPARATION BLANK

Fraction: Volatile Organics USEPA Method 8021
Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
Analyst: Jim A. DeVera Test Date: 03/10/94
Units: ug/l

Parameter	Blank Concentration
Benzene	<1.0
Ethylbenzene	<1.0
Toluene	<1.0
Vinyl Chloride	<1.0
Xylene, Total	<3.0

QUALITY CONTROL REPORT

METHOD PREPARATION BLANK

Fraction: Volatile Organics USEPA Method 8021
 Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
 Analyst: Gerald L. Holycross Test Date: 03/11/94
 Units: ug/l

Parameter	Blank Concentration
Benzene	<1.0
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon Tetrachloride	<1.0
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethyl Vinyl Ether	<10
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<1.0
Dichlorodifluoromethane	<1.0
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<1.0
1,1-Dichloroethylene	<1.0
cis-1,2-Dichloroethene	<1.0
trans-1,2-Dichloroethene	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Ethylbenzene	<1.0
Methylene Chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	<1.0
Toluene	<1.0
1,1,1-Trichloroethane	<1.0
1,1,2-Trichloroethane	<1.0
Trichloroethylene	<1.0
Trichlorofluoromethane	<1.0
Vinyl Chloride	<1.0
Xylene, Total	<3.0

QUALITY CONTROL REPORT

METHOD PREPARATION BLANK

Fraction: Volatile Organics USEPA Method 8021
Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
Analyst: Jim A. DeVera Test Date: 03/16/94
Units: ug/l

Parameter	Blank Concentration
Benzene	<1.0
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon Tetrachloride	<1.0
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethyl Vinyl Ether	<10
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<1.0
Dichlorodifluoromethane	<1.0
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<1.0
1,1-Dichloroethylene	<1.0
cis-1,2-Dichloroethene	<1.0
trans-1,2-Dichloroethene	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Ethylbenzene	<1.0
Methylene Chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	<1.0
Toluene	<1.0
1,1,1-Trichloroethane	<1.0
1,1,2-Trichloroethane	<1.0
Trichloroethylene	<1.0
Trichlorofluoromethane	<1.0
Vinyl Chloride	<1.0
Xylene, Total	<3.0

QUALITY CONTROL REPORT

METHOD PREPARATION BLANK

Fraction: Volatile Organics USEPA Method 8021
Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
Analyst: Gerald L. Holycross Test Date: 03/15/94
Units: ug/l

Parameter	Blank Concentration
Benzene	<1.0
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon Tetrachloride	<1.0
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethyl Vinyl Ether	<10
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<1.0
Dichlorodifluoromethane	<1.0
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<1.0
1,1-Dichloroethylene	<1.0
cis-1,2-Dichloroethene	<1.0
trans-1,2-Dichloroethene	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Ethylbenzene	<1.0
Methylene Chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	<1.0
Toluene	<1.0
1,1,1-Trichloroethane	<1.0
1,1,2-Trichloroethane	<1.0
Trichloroethylene	<1.0
Trichlorofluoromethane	<1.0
Vinyl Chloride	<1.0
Xylene, Total	<3.0

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: MPB Sample ID:

Method: Volatiles Purge & Trap-GC/MS USEPA-8240 WTR
62467

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Bromofluorobenzene	03/17/94	98.00	80.00 - 113.00
Dibromofluoromethane	03/17/94	88.00	88.00 - 129.00
d8-Toluene	03/17/94	101.00	83.00 - 112.00

Sample Number: MPB Sample ID:

Method: Volatiles Purge & Trap-GC/MS USEPA-8240 WTR
62467

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Bromofluorobenzene	03/16/94	95.00	80.00 - 113.00
Dibromofluoromethane	03/16/94	91.00	88.00 - 129.00
d8-Toluene	03/16/94	102.00	83.00 - 112.00

Sample Number: MPB Sample ID:

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
62108

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
3-Bromochlorobenzene-Hall	03/10/94	78.00	36.00 - 171.00
3-Bromochlorobenzene-PID	03/10/94	107.00	36.00 - 171.00

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**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: MPB Sample ID:

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
62108

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
3-Bromochlorobenzene-Hall	03/11/94	86.00	36.00 - 171.00

Sample Number: MPB Sample ID:

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
62531

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/15/94	95.00	44.00 - 152.00
3-Bromochlorobenzene-Hall	03/15/94	95.00	36.00 - 171.00
Fluorobenzene-PID	03/15/94	121.00	35.00 - 165.00
4-Chlorotoluene-PID	03/15/94	108.00	44.00 - 152.00
3-Bromochlorobenzene-PID	03/15/94	110.00	36.00 - 171.00

Sample Number: MPB Sample ID:

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
62531

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/16/94	114.00	44.00 - 152.00
3-Bromochlorobenzene-Hall	03/16/94	118.00	36.00 - 171.00

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**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: MPB Sample ID:

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
62531

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
Fluorobenzene-PID	03/16/94	88.00	35.00 - 165.00
4-Chlorotoluene-PID	03/16/94	102.00	44.00 - 152.00
3-Bromochlorobenzene-PID	03/16/94	107.00	36.00 - 171.00

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: LCS Sample ID:

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
62108

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/09/94	114.00	44.00 - 152.00
3-Bromochlorobenzene-Hall	03/09/94	113.00	36.00 - 171.00
Fluorobenzene-PID	03/09/94	102.00	35.00 - 165.00
4-Chlorotoluene-PID	03/09/94	106.00	44.00 - 152.00
3-Bromochlorobenzene-PID	03/09/94	104.00	36.00 - 171.00

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**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80611SPK Sample ID: SB-1 (2-4')

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 SOIL
62531

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/16/94	72.00	46.00 - 139.00
3-Bromochlorobenzene-Hall	03/16/94	58.00	32.00 - 139.00
Fluorobenzene-PID	03/16/94	77.00	43.00 - 145.00
4-Chlorotoluene-PID	03/16/94	68.00	23.00 - 143.00
3-Bromochlorobenzene-PID	03/16/94	52.00	32.00 - 139.00

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80611MSD Sample ID: SB-1 (2-4')

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 SOIL
62531

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/16/94	79.00	46.00 - 139.00
3-Bromochlorobenzene-Hall	03/16/94	63.00	32.00 - 139.00
Fluorobenzene-PID	03/16/94	73.00	43.00 - 145.00
4-Chlorotoluene-PID	03/16/94	65.00	23.00 - 143.00
3-Bromochlorobenzene-PID	03/16/94	57.00	32.00 - 139.00

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**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80611 Sample ID: SB-1 (2-4')

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 SOIL
62531

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/15/94	70.00	46.00 - 139.00
3-Bromochlorobenzene-Hall	03/15/94	56.00	32.00 - 139.00
Fluorobenzene-PID	03/15/94	73.00	43.00 - 145.00
4-Chlorotoluene-PID	03/15/94	66.00	23.00 - 143.00
3-Bromochlorobenzene-PID	03/15/94	58.00	32.00 - 139.00

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**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80612 Sample ID: SB-1 (4-6')

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 SOIL
62531

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/15/94	113.00	46.00 - 139.00
3-Bromochlorobenzene-Hall	03/15/94	110.00	32.00 - 139.00
Fluorobenzene-PID	03/15/94	90.00	43.00 - 145.00
4-Chlorotoluene-PID	03/15/94	98.00	23.00 - 143.00
3-Bromochlorobenzene-PID	03/15/94	99.00	32.00 - 139.00

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80613 Sample ID: SB-2 (4-6')

Method: Volatiles Purge & Trap-GC/MS USEPA-8240 SOIL
62467

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Bromofluorobenzene	03/16/94	94.00	52.00 - 124.00
Dibromofluoromethane	03/16/94	90.00	73.00 - 147.00
d8-Toluene	03/16/94	101.00	67.00 - 119.00

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80614 Sample ID: SB-2 (6-8')

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 SOIL
62531

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/16/94	99.00	46.00 - 139.00
3-Bromochlorobenzene-Hall	03/16/94	94.00	32.00 - 139.00
Fluorobenzene-PID	03/16/94	82.00	43.00 - 145.00
4-Chlorotoluene-PID	03/16/94	91.00	23.00 - 143.00
3-Bromochlorobenzene-PID	03/16/94	89.00	32.00 - 139.00

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80615 Sample ID: SB-2 (8-10')

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 SOIL
62531

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/16/94	89.00	46.00 - 139.00
3-Bromochlorobenzene-Hall	03/16/94	67.00	32.00 - 139.00
Fluorobenzene-PID	03/16/94	80.00	43.00 - 145.00
4-Chlorotoluene-PID	03/16/94	78.00	23.00 - 143.00
3-Bromochlorobenzene-PID	03/16/94	66.00	32.00 - 139.00

32169- 1

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80616 Sample ID: SB-3 (4-6')

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 SOIL
62531

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/16/94	98.00	46.00 - 139.00
3-Bromochlorobenzene-Hall	03/16/94	95.00	32.00 - 139.00
Fluorobenzene-PID	03/16/94	81.00	43.00 - 145.00
4-Chlorotoluene-PID	03/16/94	89.00	23.00 - 143.00
3-Bromochlorobenzene-PID	03/16/94	91.00	32.00 - 139.00

32169- 1

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80617 Sample ID: SB-3 (6-8')

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 SOIL
62531

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/16/94	101.00	46.00 - 139.00
3-Bromochlorobenzene-Hall	03/16/94	96.00	32.00 - 139.00
Fluorobenzene-PID	03/16/94	86.00	43.00 - 145.00
4-Chlorotoluene-PID	03/16/94	91.00	23.00 - 143.00
3-Bromochlorobenzene-PID	03/16/94	91.00	32.00 - 139.00

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80618 Sample ID: SB-3 (8-10')

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 SOIL
62531

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/16/94	95.00	46.00 - 139.00
3-Bromochlorobenzene-Hall	03/16/94	92.00	32.00 - 139.00
Fluorobenzene-PID	03/16/94	86.00	43.00 - 145.00
4-Chlorotoluene-PID	03/16/94	90.00	23.00 - 143.00
3-Bromochlorobenzene-PID	03/16/94	90.00	32.00 - 139.00

32169- 1

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80619 Sample ID: SB-5 (4-6')

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 SOIL
62531

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/16/94	95.00	46.00 - 139.00
3-Bromochlorobenzene-Hall	03/16/94	85.00	32.00 - 139.00
Fluorobenzene-PID	03/16/94	88.00	43.00 - 145.00
4-Chlorotoluene-PID	03/16/94	95.00	23.00 - 143.00
3-Bromochlorobenzene-PID	03/16/94	93.00	32.00 - 139.00

32169- 1

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80620 Sample ID: SB-5 (8-10')

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 SOIL
62531

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/16/94	79.00	46.00 - 139.00
3-Bromochlorobenzene-Hall	03/16/94	71.00	32.00 - 139.00
Fluorobenzene-PID	03/16/94	76.00	43.00 - 145.00
4-Chlorotoluene-PID	03/16/94	78.00	23.00 - 143.00
3-Bromochlorobenzene-PID	03/16/94	75.00	32.00 - 139.00

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80621 Sample ID: SB-2 (6-8') Duplicate

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 SOIL
62531

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/16/94	90.00	46.00 - 139.00
3-Bromochlorobenzene-Hall	03/16/94	85.00	32.00 - 139.00
Fluorobenzene-PID	03/16/94	75.00	43.00 - 145.00
4-Chlorotoluene-PID	03/16/94	81.00	23.00 - 143.00
3-Bromochlorobenzene-PID	03/16/94	81.00	32.00 - 139.00

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80622 Sample ID: TW-5

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
62108

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/10/94	74.00	44.00 - 152.00
3-Bromochlorobenzene-Hall	03/10/94	80.00	36.00 - 171.00
Fluorobenzene-PID	03/10/94	100.00	35.00 - 165.00
4-Chlorotoluene-PID	03/10/94	92.00	44.00 - 152.00
3-Bromochlorobenzene-PID	03/10/94	94.00	36.00 - 171.00

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80623 Sample ID: TW-2

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
62108

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/11/94	98.00	44.00 - 152.00
3-Bromochlorobenzene-Hall	03/11/94	106.00	36.00 - 171.00
Fluorobenzene-PID	03/11/94	119.00	35.00 - 165.00
4-Chlorotoluene-PID	03/11/94	109.00	44.00 - 152.00
3-Bromochlorobenzene-PID	03/11/94	109.00	36.00 - 171.00

32169- 1

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80624 Sample ID: TW-3

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
62108

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/11/94	82.00	44.00 - 152.00
3-Bromochlorobenzene-Hall	03/11/94	83.00	36.00 - 171.00
Fluorobenzene-PID	03/11/94	111.00	35.00 - 165.00
4-Chlorotoluene-PID	03/11/94	102.00	44.00 - 152.00
3-Bromochlorobenzene-PID	03/11/94	105.00	36.00 - 171.00

32169- 1

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80625 Sample ID: TW-4

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
62108

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/11/94	113.00	44.00 - 152.00
3-Bromochlorobenzene-Hall	03/11/94	105.00	36.00 - 171.00
Fluorobenzene-PID	03/11/94	132.00	35.00 - 165.00
4-Chlorotoluene-PID	03/11/94	122.00	44.00 - 152.00
3-Bromochlorobenzene-PID	03/11/94	121.00	36.00 - 171.00

32169- 1

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80626 Sample ID: TW-1

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
62108

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/11/94	86.00	44.00 - 152.00
3-Bromochlorobenzene-Hall	03/11/94	93.00	36.00 - 171.00
Fluorobenzene-PID	03/11/94	113.00	35.00 - 165.00
4-Chlorotoluene-PID	03/11/94	104.00	44.00 - 152.00
3-Bromochlorobenzene-PID	03/11/94	106.00	36.00 - 171.00

32169- 1

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80627 Sample ID: Trip Blank

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
62108

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/11/94	83.00	44.00 - 152.00
3-Bromochlorobenzene-Hall	03/11/94	86.00	36.00 - 171.00
Fluorobenzene-PID	03/11/94	114.00	35.00 - 165.00
4-Chlorotoluene-PID	03/11/94	105.00	44.00 - 152.00
3-Bromochlorobenzene-PID	03/11/94	106.00	36.00 - 171.00

32169- 1

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80628 Sample ID: Equipment Rinse Blk SB-1 (4-6)

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
62108

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/10/94	75.00	44.00 - 152.00
3-Bromochlorobenzene-Hall	03/10/94	76.00	36.00 - 171.00
Fluorobenzene-PID	03/10/94	98.00	35.00 - 165.00
4-Chlorotoluene-PID	03/10/94	90.00	44.00 - 152.00
3-Bromochlorobenzene-PID	03/10/94	94.00	36.00 - 171.00

32169- 1

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80629 Sample ID: Trip Blank

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
62108

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/10/94	70.00	44.00 - 152.00
3-Bromochlorobenzene-Hall	03/10/94	74.00	36.00 - 171.00
Fluorobenzene-PID	03/10/94	98.00	35.00 - 165.00
4-Chlorotoluene-PID	03/10/94	89.00	44.00 - 152.00
3-Bromochlorobenzene-PID	03/10/94	93.00	36.00 - 171.00

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METHODS PAGE

Parameter: Percent Solids

Method: Residue-Gravimetric, Dried @ 103-105*C

Application: SOIL

Analyst: Rachel M. Shirey

Reference Citation: USEPA-160.3

Date Analyzed: 03/17/94

80611 SB-1 (2-4')

Parameter: Percent Solids

Method: Residue-Gravimetric, Dried @ 103-105*C

Application: SOIL

Analyst: Rachel M. Shirey

Reference Citation: USEPA-160.3

Date Analyzed: 03/21/94

80612 SB-1 (4-6')

Parameter: Percent Solids

Method: Residue-Gravimetric, Dried @ 103-105*C

Application: SOIL

Analyst: Rachel M. Shirey

Reference Citation: USEPA-160.3

Date Analyzed: 03/17/94

80613 SB-2 (4-6')

80614 SB-2 (6-8')

80615 SB-2 (8-10')

80616 SB-3 (4-6')

80617 SB-3 (6-8')

80618 SB-3 (8-10')

80619 SB-5 (4-6')

80620 SB-5 (8-10')

80621 SB-2 (6-8') Duplicate

Parameter: Project Specific Fraction USEPA Method 8021

Method: Halogenated and Aromatic Volatiles by GC

Application: SOIL

Analyst: Gerald L. Holycross

Reference Citation: USEPA-8021

Date Analyzed: 03/15/94

80611 SB-1 (2-4')

80612 SB-1 (4-6')

METHODS PAGE

Parameter: Project Specific Fraction USEPA Method 8021

Method: Halogenated and Aromatic Volatiles by GC

Application: SOIL

Reference Citation: USEPA-8021

Analyst: Gerald L. Holycross

Date Analyzed: 03/16/94

80614	SB-2	(6-8')
80615	SB-2	(8-10')
80616	SB-3	(4-6')
80617	SB-3	(6-8')
80618	SB-3	(8-10')
80619	SB-5	(4-6')
80620	SB-5	(8-10')
80621	SB-2	(6-8') Duplicate

Parameter: Project Specific Fraction USEPA Method 8021

Method: Halogenated and Aromatic Volatiles by GC

Application: WTR

Reference Citation: USEPA-8021

Analyst: Steve R. Repp

Date Analyzed: 03/10/94

80622 TW-5

Parameter: Project Specific Fraction USEPA Method 8021

Method: Halogenated and Aromatic Volatiles by GC

Application: WTR

Reference Citation: USEPA-8021

Analyst: Gerald L. Holycross

Date Analyzed: 03/11/94

80623	TW-2
80624	TW-3
80625	TW-4
80626	TW-1
80627	Trip Blank

Parameter: Project Specific Fraction USEPA Method 8021

Method: Halogenated and Aromatic Volatiles by GC

Application: WTR

Reference Citation: USEPA-8021

Analyst: Steve R. Repp

Date Analyzed: 03/10/94

80628 Equipment Rinse Blk SB-1 (4-6)

32169- 1

METHODS PAGE

Parameter: Project Specific Fraction USEPA Method 8021
Method: Halogenated and Aromatic Volatiles by GC
Application: WTR Reference Citation: USEPA-8021
Analyst: Steve R. Repp Date Analyzed: 03/10/94

80629 Trip Blank

Parameter: Project Specific Fraction USEPA Method 8240
Method: Volatiles Purge & Trap-GC/MS
Application: SOIL Reference Citation: USEPA-8240
Analyst: Janet M. Kudirka Date Analyzed: 03/16/94

80613 SB-2 (4-6')

Page 3 - End of Methods Page

STATEMENT OF DATA QUALIFICATIONS

CLIENT: Selmer Company

SUBMITTAL: 32169-2

- All analyses have been validated and comply with our Quality Control Program. No qualifications required.
 The following analyses have been qualified for the reasons cited.

KEY

1. Sample integrity suspect upon receipt (explain).
2. Analysis performed beyond EPA established maximum allowable holding time.
3. Detection limit elevated due to matrix interferences.
4. Laboratory control sample value outside established acceptable limits.
5. Matrix spike sample value outside established acceptable limits.
6. Duplicate analysis value outside established acceptable limits.
7. Surrogate/internal standard recoveries outside established acceptable limits.
8. Data point suspect due to potential laboratory contamination (explain).
9. Coelutes with the compound cited. Result may represent a combination of both compounds.
10. Other (explain).

Note: This document is included as part of the Analytical Report for the above referenced and should be retained as a permanent record thereof.

Environmental Data
Management System
QA/QC LLB

ANALYTICAL REPORT

Selmer Company
Proj: Phase II
Field Investigation
Subm: March 10th Submittal

Submittal Number: 32169- 2
Location:
CCS Number 22334.00
CCS Manager: Scott Dennis

	SB-4 Offset 4-6'	SB-4 Offset 6-8'	SB-4 Offset 6-8' Dup	Detection Units Limit
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WWES Sample No: 80910 80911 80912

Project Specific Fraction	Enclosed	Enclosed	Enclosed
USEPA Method 8021			
Percent Solids	83	86	87

Sampled by:			
Date Sampled:	03/10/94	03/10/94	03/10/94
Time Sampled:	00:00	00:00	00:00
Date Received:	03/10/94	03/10/94	03/10/94
Time Received:	13:45	13:45	13:45

Page 1

**Environmental Data
Management System**
QA/QC U/S

ANALYTICAL REPORT

Selmer Company
Proj: Phase II
Field Investigation
Subm: March 10th Submittal

Submittal Number: 32169- 2
Location:
CCS Number 22334.00
CCS Manager: Scott Dennis

SB-4
Offset
8-10'

Detection Units
Limit

WWES Sample No: 80913

Project Specific Fraction Enclosed
USEPA Method 8021

Percent Solids 86 0.1 %

Sampled by:

Date Sampled: 03/10/94

Time Sampled: 00:00

Date Received: 03/10/94

Time Received: 13:45

Page 2

Environmental Data
Management System
QA/QC UD

PROJECT SPECIFIC FRACTION
USEPA METHOD 8021

Selmer Company

Proj: Phase II
Field Investigation
Subm: March 10th Submittal
Sample: SB-4
Offset
4-6'

Submittal Number 32169- 2
Date Sampled: 03/10/94 Time: 00:00
Date Received: 03/10/94 Time: 13:45
Analysis Date: 03/16/94
Sample No: 80910

Parameter	Result mg/kg	Parameter	Result mg/kg
Benzene	<0.010	1,1-Dichloroethylene	<0.010
Bromodichloromethane	<0.010	trans-1,2-Dichloroethene	<0.010
Bromoform	<0.010	cis-1,2-Dichloroethene	<0.010
Bromomethane	<0.010	1,2-Dichloropropane	<0.010
Carbon Tetrachloride	<0.010	cis-1,3-Dichloropropene	<0.010
Chlorobenzene	<0.010	trans-1,3-Dichloropropene	<0.010
Chloroethane	<0.010	Ethylbenzene	<0.010
2-Chloroethyl Vinyl Ether	<0.10	Methylene Chloride	<0.010
Chloroform	<0.010	1,1,2,2-Tetrachloroethane	<0.010
Chloromethane	<0.010	Tetrachloroethylene	<0.010
Dibromochloromethane	<0.010	Toluene	<0.010
1,2-Dichlorobenzene	<0.010	1,1,1-Trichloroethane	<0.010
1,3-Dichlorobenzene	<0.010	1,1,2-Trichloroethane	<0.010
1,4-Dichlorobenzene	<0.010	Trichloroethylene	0.22
Dichlorodifluoromethane	<0.010	Trichlorofluoromethane	<0.010
1,1-Dichloroethane	<0.010	Vinyl Chloride	<0.010
1,2-Dichloroethane	<0.010	Xylene, Total	<0.030

PROJECT SPECIFIC FRACTION
USEPA METHOD 8021**Selmer Company**

Proj: Phase II

Field Investigation

Subm: March 10th Submittal

Sample: SB-4

Offset

6-8'

Submittal Number 32169- 2
Date Sampled: 03/10/94 Time: 00:00
Date Received: 03/10/94 Time: 13:45
Analysis Date: 03/18/94
Sample No: 80911

Parameter	Result mg/kg	Parameter	Result mg/kg
Benzene	<2.0	1,1-Dichloroethylene	<2.0
Bromodichloromethane	<2.0	trans-1,2-Dichloroethene	<2.0
Bromoform	<2.0	cis-1,2-Dichloroethene	<2.0
Bromomethane	<2.0	1,2-Dichloropropane	<2.0
Carbon Tetrachloride	<2.0	cis-1,3-Dichloropropene	<2.0
Chlorobenzene	<2.0	trans-1,3-Dichloropropene	<2.0
Chloroethane	<2.0	Ethylbenzene	<2.0
2-Chloroethyl Vinyl Ether	<20	Methylene Chloride	<2.0
Chloroform	<2.0	1,1,2,2-Tetrachloroethane	<2.0
Chloromethane	<2.0	Tetrachloroethene	<2.0
Dibromochloromethane	<2.0	Toluene	<2.0
1,2-Dichlorobenzene	<2.0	1,1,1-Trichloroethane	<2.0
1,3-Dichlorobenzene	<2.0	1,1,2-Trichloroethane	<2.0
1,4-Dichlorobenzene	<2.0	Trichloroethylene	38
Dichlorodifluoromethane	<2.0	Trichlorofluoromethane	<2.0
1,1-Dichloroethane	<2.0	Vinyl Chloride	<2.0
1,2-Dichloroethane	<2.0	Xylene, Total	<6.0

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PROJECT SPECIFIC FRACTION
USEPA METHOD 8021

Selmer Company
Proj: Phase II
Field Investigation
Subm: March 10th Submittal
Sample: SB-4
Offset
6-8' Dup

Submittal Number 32169- 2
Date Sampled: 03/10/94 Time: 00:00
Date Received: 03/10/94 Time: 13:45
Analysis Date: 03/18/94
Sample No: 80912

Parameter	Result mg/kg	Parameter	Result mg/kg
Benzene	<2.0	1,1-Dichloroethylene	<2.0
Bromodichloromethane	<2.0	trans-1,2-Dichloroethene	<2.0
Bromoform	<2.0	cis-1,2-Dichloroethene	<2.0
Bromomethane	<2.0	1,2-Dichloropropane	<2.0
Carbon Tetrachloride	<2.0	cis-1,3-Dichloropropene	<2.0
Chlorobenzene	<2.0	trans-1,3-Dichloropropene	<2.0
Chloroethane	<2.0	Ethylbenzene	<2.0
2-Chloroethyl Vinyl Ether	<20	Methylene Chloride	<2.0
Chloroform	<2.0	1,1,2,2-Tetrachloroethane	<2.0
Chloromethane	<2.0	Tetrachloroethene	<2.0
Dibromochloromethane	<2.0	Toluene	<2.0
1,2-Dichlorobenzene	<2.0	1,1,1-Trichloroethane	<2.0
1,3-Dichlorobenzene	<2.0	1,1,2-Trichloroethane	<2.0
1,4-Dichlorobenzene	<2.0	Trichloroethylene	27
Dichlorodifluoromethane	<2.0	Trichlorofluoromethane	<2.0
1,1-Dichloroethane	<2.0	Vinyl Chloride	<2.0
1,2-Dichloroethane	<2.0	Xylene, Total	<6.0

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PROJECT SPECIFIC FRACTION
USEPA METHOD 8021

Selmer Company

Proj: Phase II

Field Investigation

Subm: March 10th Submittal

Sample: SB-4

Offset

8-10'

Submittal Number 32169- 2
Date Sampled: 03/10/94 Time: 00:00
Date Received: 03/10/94 Time: 13:45
Analysis Date: 03/18/94
Sample No: 80913

Parameter	Result mg/kg	Parameter	Result mg/kg
Benzene	<2.0	1,1-Dichloroethylene	<2.0
Bromodichloromethane	<2.0	trans-1,2-Dichloroethene	<2.0
Bromoform	<2.0	cis-1,2-Dichloroethene	<2.0
Bromomethane	<2.0	1,2-Dichloropropane	<2.0
Carbon Tetrachloride	<2.0	cis-1,3-Dichloropropene	<2.0
Chlorobenzene	<2.0	trans-1,3-Dichloropropene	<2.0
Chloroethane	<2.0	Ethylbenzene	<2.0
2-Chloroethyl Vinyl Ether	<20	Methylene Chloride	<2.0
Chloroform	<2.0	1,1,2,2-Tetrachloroethane	<2.0
Chloromethane	<2.0	Tetrachloroethene	<2.0
Dibromochloromethane	<2.0	Toluene	<2.0
1,2-Dichlorobenzene	<2.0	1,1,1-Trichloroethane	<2.0
1,3-Dichlorobenzene	<2.0	1,1,2-Trichloroethane	<2.0
1,4-Dichlorobenzene	<2.0	Trichloroethylene	40
Dichlorodifluoromethane	<2.0	Trichlorofluoromethane	<2.0
1,1-Dichloroethane	<2.0	Vinyl Chloride	<2.0
1,2-Dichloroethane	<2.0	Xylene, Total	<6.0

Page 6 - End of Analytical Report

Environmental Data
Management System
QA/QC DB

32169 - 2

QUALITY CONTROL REPORT**Parameter: Percent Solids**

Method: Residue-Gravimetric, Dried @ 103-105°C USEPA-160.3 SOIL

Method Preparation Blank

Test Date	Analyst	Blank Conc
03/21/94	Rachel M. Shirey	<0.1

Duplicate Percent Difference $>10 \times \text{ODL Mean \%} = 0.00$ Limits: 0.00- 25.00
 $\leq 10 \times \text{ODL Mean \%} = 0.88$ Limits: 0.00- 4.51

Sample Number	Test Date	Analyst	Sample Conc	Duplicate Conc	Relative % Difference
80910	03/21/94	Rachel M. Shirey	83	83	0.00 %

Page 1

QUALITY CONTROL REPORT**MATRIX SPIKE RECOVERY**

Fraction: Volatile Organic Fraction USEPA Method-8021
Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 SOIL
Analyst: Gerald L. Holycross Test Date: 03/18/94
Sample No: 80911
Units: mg/kg

Parameter	Sample Conc	Spike Quantity	Sample +Spike	Spike % Rec	Control Limits
Benzene	<2.0	23.3	24.9	106.87	51.87-140.73
Chlorobenzene	<2.0	23.3	19.3	82.83	69.73-128.35
1,1-Dichloroethylene	<2.0	23.3	24.0	103.00	27.98-159.32
Trichloroethylene	38	23.3	54.5	70.82	65.96-138.26
Toluene	<2.0	23.3	20.1	86.27	51.47-143.57

QUALITY CONTROL REPORT**MATRIX SPIKE RECOVERY**

Fraction: Volatile Organic Fraction USEPA Method-8021
Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 SOIL
Analyst: Gerald L. Holycross Test Date: 03/18/94
Sample No: 80911
Units: mg/kg

Parameter	Sample Conc	Spike Quantity	Sample +Spike	Spike % Rec	Control Limits
Benzene	<2.0	23.3	25.3	108.58	51.87-140.73
Chlorobenzene	<2.0	23.3	20.7	88.84	69.73-128.35
1,1-Dichloroethylene	<2.0	23.3	24.1	103.43	27.98-159.32
Trichloroethylene	38	23.3	56.9	81.12	65.96-138.26
Toluene	<2.0	23.3	20.6	88.41	51.47-143.57

QUALITY CONTROL REPORT

MATRIX SPIKE DUPLICATE

Fraction: Volatile Organic Fraction USEPA Method-8021
Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 SOIL
Analyst: Gerald L. Holycross Test Date: 03/18/94
Sample No: 80911
Units: mg/kg

Parameter	Sample+Spike Conc #1	Sample+Spike Conc #2	Relative % Diff.	Control Limits
Benzene	24.9	25.3	1.59	0.00- 22.51
Chlorobenzene	19.3	20.7	7.00	0.00- 20.54
1,1-Dichloroethylene	24.0	24.1	0.42	0.00- 23.29
Trichloroethylene	54.5	56.9	4.31	0.00- 15.93
Toluene	20.1	20.6	2.46	0.00- 21.27

QUALITY CONTROL REPORT

LABORATORY CONTROL SAMPLE

Fraction: Volatile Organic Fraction USEPA Method-8021
Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
Analyst: Gerald L. Holycross Test Date: 03/15/94
Units: ug/l

Parameter	Blank Conc	Spike Quantity	Spike Result	Spike % Rec	Control Limits
Benzene	<1.0	20.0	19.9	99.50	76.54-120.28
Chlorobenzene	<1.0	20.0	22.4	112.00	78.32-119.84
1,1-Dichloroethylene	<1.0	20.0	22.3	111.50	65.44-134.32
Trichloroethylene	<1.0	20.0	22.0	110.00	82.59-122.49
Toluene	<1.0	20.0	19.6	98.00	76.91-121.37

QUALITY CONTROL REPORT

METHOD PREPARATION BLANK

Fraction: Volatile Organics USEPA Method 8021
Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
Analyst: Jim A. DeVera Test Date: 03/16/94
Units: ug/l

Parameter	Blank Concentration
Benzene	<1.0
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon Tetrachloride	<1.0
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethyl Vinyl Ether	<10
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<1.0
Dichlorodifluoromethane	<1.0
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<1.0
1,1-Dichloroethylene	<1.0
cis-1,2-Dichloroethene	<1.0
trans-1,2-Dichloroethene	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Ethylbenzene	<1.0
Methylene Chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	<1.0
Toluene	<1.0
1,1,1-Trichloroethane	<1.0
1,1,2-Trichloroethane	<1.0
Trichloroethylene	<1.0
Trichlorofluoromethane	<1.0
Vinyl Chloride	<1.0
Xylene, Total	<3.0

QUALITY CONTROL REPORT

METHOD PREPARATION BLANK

Fraction: Volatile Organics USEPA Method 8021
Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
Analyst: Gerald L. Holycross Test Date: 03/15/94
Units: ug/l

Parameter	Blank Concentration
Benzene	<1.0
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon Tetrachloride	<1.0
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethyl Vinyl Ether	<10
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<1.0
Dichlorodifluoromethane	<1.0
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<1.0
1,1-Dichloroethylene	<1.0
cis-1,2-Dichloroethene	<1.0
trans-1,2-Dichloroethene	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Ethylbenzene	<1.0
Methylene Chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	<1.0
Toluene	<1.0
1,1,1-Trichloroethane	<1.0
1,1,2-Trichloroethane	<1.0
Trichloroethylene	<1.0
Trichlorofluoromethane	<1.0
Vinyl Chloride	<1.0
Xylene, Total	<3.0

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: MPB Sample ID:

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
62531

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/15/94	95.00	44.00 - 152.00
3-Bromochlorobenzene-Hall	03/15/94	95.00	36.00 - 171.00
Fluorobenzene-PID	03/15/94	121.00	35.00 - 165.00
4-Chlorotoluene-PID	03/15/94	108.00	44.00 - 152.00
3-Bromochlorobenzene-PID	03/15/94	110.00	36.00 - 171.00

Sample Number: MPB Sample ID:

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 WTR
62531

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/16/94	114.00	44.00 - 152.00
3-Bromochlorobenzene-Hall	03/16/94	118.00	36.00 - 171.00
Fluorobenzene-PID	03/16/94	88.00	35.00 - 165.00
4-Chlorotoluene-PID	03/16/94	102.00	44.00 - 152.00
3-Bromochlorobenzene-PID	03/16/94	107.00	36.00 - 171.00

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80611SPK Sample ID: SB-1 (2-4')

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 SOIL
62531

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/16/94	72.00	46.00 - 139.00
3-Bromochlorobenzene-Hall	03/16/94	58.00	32.00 - 139.00
Fluorobenzene-PID	03/16/94	77.00	43.00 - 145.00
4-Chlorotoluene-PID	03/16/94	68.00	23.00 - 143.00
3-Bromochlorobenzene-PID	03/16/94	52.00	32.00 - 139.00

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80911SPK Sample ID: SB-4 Offset: 6-8'

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 SOIL
62564

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/18/94	101.00	46.00 - 139.00
3-Bromochlorobenzene-Hall	03/18/94	99.20	32.00 - 139.00
Fluorobenzene-PID	03/18/94	112.00	43.00 - 145.00
4-Chlorotoluene-PID	03/18/94	104.00	23.00 - 143.00
3-Bromochlorobenzene-PID	03/18/94	112.00	32.00 - 139.00

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80611MSD Sample ID: SB-1 (2-4')

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 SOIL
62531

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/16/94	79.00	46.00 - 139.00
3-Bromochlorobenzene-Hall	03/16/94	63.00	32.00 - 139.00
Fluorobenzene-PID	03/16/94	73.00	43.00 - 145.00
4-Chlorotoluene-PID	03/16/94	65.00	23.00 - 143.00
3-Bromochlorobenzene-PID	03/16/94	57.00	32.00 - 139.00

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**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80911MSD Sample ID: SB-4 Offset: 6-8'

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 SOIL
62564

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/18/94	102.00	46.00 - 139.00
3-Bromochlorobenzene-Hall	03/18/94	104.00	32.00 - 139.00
Fluorobenzene-PID	03/18/94	109.00	43.00 - 145.00
4-Chlorotoluene-PID	03/18/94	105.00	23.00 - 143.00
3-Bromochlorobenzene-PID	03/18/94	114.00	32.00 - 139.00

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80910 Sample ID: SB-4 Offset: 4-6'

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021
62531 SOIL

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/16/94	106.00	46.00 - 139.00
3-Bromochlorobenzene-Hall	03/16/94	105.00	32.00 - 139.00
Fluorobenzene-PID	03/16/94	82.00	43.00 - 145.00
4-Chlorotoluene-PID	03/16/94	94.00	23.00 - 143.00
3-Bromochlorobenzene-PID	03/16/94	95.00	32.00 - 139.00

32169- 2

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80911 Sample ID: SB-4 Offset: 6-8'

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 SOIL
62564

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/18/94	113.00	46.00 - 139.00
3-Bromochlorobenzene-Hall	03/18/94	109.00	32.00 - 139.00
Fluorobenzene-PID	03/18/94	130.00	43.00 - 145.00
4-Chlorotoluene-PID	03/18/94	115.00	23.00 - 143.00
3-Bromochlorobenzene-PID	03/18/94	131.00	32.00 - 139.00

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80912 Sample ID: SB-4 Offset 6-8' Dup

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 SOIL
62564

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/18/94	108.00	46.00 - 139.00
3-Bromochlorobenzene-Hall	03/18/94	103.00	32.00 - 139.00
Fluorobenzene-PID	03/18/94	124.00	43.00 - 145.00
4-Chlorotoluene-PID	03/18/94	111.00	23.00 - 143.00
3-Bromochlorobenzene-PID	03/18/94	128.00	32.00 - 139.00

**QUALITY CONTROL REPORT
SURROGATE RECOVERIES**

Sample Number: 80913 Sample ID: SB-4 Offset: 8-10'

Method: Halogenated and Aromatic Volatiles by GC USEPA-8021 SOIL
62564

Surrogate Compound	Analysis Date	Percent Recovery	Control Limits
4-Chlorotoluene-Hall	03/18/94	103.00	46.00 - 139.00
3-Bromochlorobenzene-Hall	03/18/94	96.00	32.00 - 139.00
Fluorobenzene-PID	03/18/94	121.00	43.00 - 145.00
4-Chlorotoluene-PID	03/18/94	108.00	23.00 - 143.00
3-Bromochlorobenzene-PID	03/18/94	126.00	32.00 - 139.00

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METHODS PAGE

Parameter: Percent Solids

Method: Residue-Gravimetric, Dried @ 103-105*C

Application: SOIL

Reference Citation: USEPA-160.3

Analyst: Rachel M. Shirey

Date Analyzed: 03/21/94

80910	SB-4	Offset	4-6'
80911	SB-4	Offset	6-8'
80912	SB-4	Offset	6-8' Dup
80913	SB-4	Offset	8-10'

Parameter: Project Specific Fraction USEPA Method 8021

Method: Halogenated and Aromatic Volatiles by GC

Application: SOIL

Reference Citation: USEPA-8021

Analyst: Gerald L. Holycross

Date Analyzed: 03/16/94

80910	SB-4	Offset	4-6'
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Parameter: Project Specific Fraction USEPA Method 8021

Method: Halogenated and Aromatic Volatiles by GC

Application: SOIL

Reference Citation: USEPA-8021

Analyst: Steve R. Repp

Date Analyzed: 03/18/94

80911	SB-4	Offset	6-8'
80912	SB-4	Offset	6-8' Dup
80913	SB-4	Offset	8-10'